

Journal of Media and Social Development

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The Journal is a platform for publishing high quality original research and experiments in the significant areas of economic, political, social, cultural and media perspectives of development.

The Project has established Centre for Area Studies. The Centre has started M.Phil in 'Area Studies - Karnataka Studies' for the first time in the state of Karnataka.

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Development - Induced Displacement and the Print Media in Karnataka

POORNANANDA D.S.

Abstract

Displacement is not mere physical transfer to a new place but a long process affecting the lives of thousands of people. For those who are attached to the land it is a traumatic experience. Karnataka is one of the states where lakhs of people have been displaced by development projects. The state has the third highest number of persons displaced by dams after Maharashtra and Andhra Pradesh. Although media in Karnataka have been reporting displacement issues for the last three decades there have hardly been any content analyses of news related to displacement. This study looks at coverage of displacement as the main focus of investigation. The study examines the coverage and framing of news related development induced displacement in daily newspapers published in Karnataka. The study shows that Environmental stories in newspapers constituted only a small percent of (0.52) of all news reported. As low as 0.9 percent of the total news in the newspapers was about issues of displacement. Official bias permeates most stories of displacement in newspapers and that explains why a majority of the displaced persons do not see the coverage of issues favourable to them.

Keywords: Development, Displacement, Rehabilitation, Framing, Sources, Environment.

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INTRODUCTION

One of the consequences of the contemporary dynamics of economic development has been displacement of millions of people. Massive industries, large dams and mines, it was believed, would transform Independent India

into a modern state leading to economic progress and prosperity. The first prime minister of India, Jawaharlal Nehru, was so euphoric about the benefits of industries and big dams that he called them “temples of modern India”, while inaugurating Bhakra Nangal Dam on July 7, 1954. The dominant belief was that big industries and big dams would bring prosperity to India. This ‘universal idolatry of gigantism’ (Schumacher, 1976) led to conceiving massive projects to achieve what was perceived as development.

In 1950s and 1960s, the dominant view of development was influenced by modernization theories, which saw development as transforming simple traditional Third World societies into modern, complex, Westernized ones (Inkeles & Smith, 1974; Lerner; 1958; Hagen, 1962, McClelland, 1964; Rogers, 1976). Large-scale, capital-intensive projects were expected to accelerate the pace of economic growth. If people were displaced along the way, that was deemed a necessary evil. It was even considered as an actual good, because it was believed that it would help them change for the better (Robinson, 2003).

The problem of development-induced displacement is a global issue that has affected millions of people in Africa, Asia and Latin America, and the citizens of the developed countries. People have been displaced due to building of large dams, extraction of resources, urbanization and transformation of urban areas, population redistribution schemes, eviction in city areas, expansion of urban areas, deforestation and the conservation of nature. According to Terminsky (2015: 33) the term displacement refers to “eviction of people from their habitual homeland without adequate compensation, guarantees or mechanisms of social support, or to the initial phase of a process of resettlement which is associated with physical relocation of people from their homes.” Development-induced displacement is currently among the most prominent categories of forced migration, leading to significantly dangerous humanitarian consequences.

Displacement involves processes that affect the lives of displaced people over a long period. The gestation period of some of the projects can be decades long. When a dam is planned and villages to be submerged are

identified no development takes place in those villages and once people are evicted on completion or partial completion of the project rehabilitating and resettling them will take many years, sometimes decades (Altinbilek, 2002). There have been many cases of people fighting for compensation and resettlement five decades after they were displaced. Displacement is not mere physical transfer to a new place but a long process affecting the lives of thousands of people. For those who are attached to the land it is a traumatic experience.

If large-scale, capital-intensive development projects uprooted millions of people (Cernea, 1995) the planners believed displacement would be in their interest, as they would experience social and economic change. The people living in the area earmarked for building development project were ordered to leave their homes and move elsewhere for the greater common good (Roy, 1999). Speaking at a public meeting in the submergence zone of the Pong Dam in 1961 Morarji Desai, the then Deputy Prime Minister of India said *“We will request you to move from your houses after the dam comes up. If you move it will be good. Otherwise we shall release the waters and drown you all”* (Cited in Roy, 1999) Jawaharlal Nehru told villagers who were to be displaced by the Hirakud Dam in 1948 *“If you are to suffer, you should suffer in the interest of the country.”* (Cited in Roy, 1999). Although development projects like hydroelectric and irrigation projects, mines, thermal and nuclear power plants, industrial complexes have displaced several million people in the last six decades it has remained a non-issue for governments, politicians and policy makers in India (Dutta, 2007).

Large dams alone have displaced 21.6 million people (Paranjpye, 1988). Michael Cernea, a sociologist who worked for the World Bank has conducted extensive research on development-induced displacement, resettlement, social change and project assessment (1986; 1990; 1995; 2008) and has identified eight potential risks that are intrinsic to development in his impoverishment risks and reconstruction model (2000). Landlessness, joblessness, homelessness, marginalization, food insecurity, increased morbidity, and

mortality, loss of access to common property and social disintegration are the major risks that the displaced people face (Cernea, 1995). The displaced people are often forced to move to economically, socially, and culturally different settings (Dutta, 2007).

A significant number of the displaced people are the tribals, and other economically marginalized rural people, who have depended upon the natural resource base for their livelihood (Government of India, 1993). Although tribal population constitutes eight percent of the population of India 40 percent of the displaced persons are tribal people (Negi & Ganguly, 2010). The most important serious consequence of development-induced displacement for the tribal people has been the dispossession of land, along with the loss of their traditional occupation. Most tribals have been deprived of compensation and rehabilitation benefits as they do not possess any legal documents to prove their ownership right on their land although they have been earning their livelihood for centuries together.

The struggle against development-induced displacement in India began with the struggle against the *Mulshi* Dam, a hydro-electric project located at about 20 kms south-west of Pune in 1921. The project, promoted by Tatas, had been commissioned in 1920 to supply power to the rising industrial city of then Bombay. Over 11,000 people were slated to be displaced from their paddy fields. With the support of the freedom fighters the local inhabitants decided to resist eviction (Bhuskote, 1968). Although a reasonable compensation was given much of it went into the hands of moneylenders to whom the peasants were indebted. The displacement left the peasants moneyless, landless and homeless. A positive consequence of this agitation was that the Tata group did not proceed with the other hydroelectric projects they had intended for the *Sahyadri* (Western Ghat - a mountain range along the western side of India).

Gadgil and Guha (2013) have drawn parallels between the *Mulshi Satyagraha* and ongoing protests against large dams. Dam building in India after independence became a major symbol of modernization, scientific progress and a matter of national pride (Raina, 2010) but no specific policy

was ever formulated either by the central governments or the state governments to address the issue of displacement of people. There were strong protests against Hirakud multipurpose dam in Odisha in 1946. However, the agitation fizzled out with the involvement of political parties. There was very little opposition to the massive river valley projects of the 1950s (Gadgil & Guha, 1995). Although the *Bhakra-Nangal* dam in Punjab, the *Tungabhadra* project on the Andhra Pradesh - Karnataka border and *Rihand* dam in Uttar Pradesh displaced tens of thousands of people but there were no massive protests.

In the early years of dam building in India, villagers were willing to sacrifice for nation building (Hart, 1956). Over the years, the Indian villagers who witnessed plight of the displaced persons developed a marked unwillingness to make way for 'nation-building' projects. Although large-scale projects had displaced millions of people rehabilitation was never a part of development planning. A national policy for rehabilitation and resettlement was not formulated until 2007.

Of all the movements against big dams the movement against the *Narmada* river valley project has been a prolonged and intense one. Although the early protests against the projects in the *Narmada* valley began in the year 1978 the movement picked up momentum with Medha Patkar, social activist, assuming leadership in 1985 (Maitra, 2009).

Development and Displacement in Karnataka

Karnataka is one of the states where lakhs of people have been displaced by development projects. The state has the third highest number of persons displaced by dams after Maharashtra and Andhra Pradesh (Ministry of Water Resources, 2016). The movement against displacement emerged in the state only towards the late 1970s and early 1980s. The struggle against the *Bedthi* hydroelectric project that was to displace people living in 25 villages of Uttara Kannada district has been one of the few successful anti-displacement struggles in Karnataka. Farmers, writers, intellectuals and environmentalists including Sunderlal Bahuguna founder of Chipko

movement, took part in the struggle that forced the government to shelve the project (Gadgil & Guha, 1995). When another attempt was made to build *Bedthi* dam in the 1990s it was met with stiff resistance.

The coastal districts of Dakshina Kannada, Udupi and Uttara Kannada have been in the forefront of environmental and anti-displacement movement. Like many other rivers in Uttara Kannada, *Kali* river has more dams throughout its course. Six major hydroelectric dams *Supa*, *Kodasalli*, *Kadra*, *Kaneri*, *Tattihalla* and *Bommanahalli* dam were constructed across the *Kali* river. People's resistance has succeeded in preventing seventh dam being constructed on the river. Displacement by these projects has led to breaking up of communities with people being forced to move to different places cutting them off from their social and cultural roots. They had to rebuild their lives all over again in places unfamiliar to them. Some of those displaced by the *Sharavathi* project were displaced again by the *Kali* project and then by *Sharavathi* Tailrace Project. Repeated displacements have caused immeasurable social, economic and cultural loss but no proper rehabilitation of the displaced population has taken place (Lokesh, 2010).

A dam project proposed on *Aghanashini* river near Hurlamane in Uttara Kannada district that was to submerge 100 villages was shelved due to stiff opposition from the people. A coal-fired power plant at Chamalapura near Mysore city was shelved after stiff resistance. POSCO, a steel company that had planned to set up a plant at Gadag shelved it after protests by farmers and religious leaders. The Sea Bird Project near Karwar caused massive displacement. Over 3000 families of farmers and fishermen were displaced. The Mangalore Special Economic Zone (MSEZ) displaced 500 families, which carried on a long struggle for fair compensation and rehabilitation. The Udupi Power Corporation, which had established a thermal power plant near Nandikuru in Udupi District, faced opposition by the farmers and religious leaders.

These anti-displacement struggles did create some awareness among the people of Karnataka about the harmful consequences of development projects. Since dam building was equated with nation building opposing it

was almost seen as an anti-national act. For decades, media which were supposed to play a vital role in national development did not consider the consequences of building dams as a major agenda (D'Monte, 1985). However, media can greatly help create awareness among the people about the consequences of displacement and also about the rights of the people in seeking adequate compensation and rehabilitation.

LITERATURE REVIEW

The mass media play an important role in shaping the public perception of problems associated with displacement (Gadgil & Guha, 1995). An analysis of how the issue of development-induced displacement is reported in the media and what frames are being used is vital in the context of economic policies aimed at achieving higher growth. Since the process of news production involves the mechanism of how mass media select and organize the reality (Getlin 1980; Tuchman, 1978), the concept of frame is important in investigating how media report displacement issues. Studies have revealed that while the media have generally shown their concern towards environmental degradation they have ignored the human consequences of displacement (Patwardhan, 2000).

Although mainstream media generally report on improper rehabilitation and resettlement of the displaced persons, they tend to support the view that dam building and industrialization that displace people are inevitable consequences of economic growth (Roy, 1999).

Although claims-makers and their opponents routinely compete to promote their favoured frames to journalists as well as to potential supporters, news workers forge their own frames. Even when the details of an event are not disputed, the event can be framed in a number of different ways. Gamson and Wolfsfeld (1993) depict the interaction between the movements and the media as a subtle 'contest over meaning' in which activists attempt to 'sell' (Guha, 2010) their preferred images, argument and story lines to journalists and editors who, more often than not, prefer to maintain and reproduce the dominant mainstream frames and cultural codes. The issues

involving displacement and rehabilitation have often been framed by journalists within event orientation.

Akhileshwari (1989), Guha (1992) Gadgil and Guha (1995), Krishna (1996), Chapman et al. (1997), Hegde (1999), D'Monte (2005) have found that the media have contributed considerably to the growth of awareness with regard to environment and displacement in India although there are differences in the approaches to understanding displacement issues by different media. These studies suggest that the media are important in promoting awareness and building agenda (McCombs & Shaw, 1972; McCombs, 1994) with regard to environmental and displacement issues. Media framing of displacement issues has implications on claims making and mobilizing tasks of civil society groups that have been leading anti-displacement movements (Somayaji & Mangalekar, 2011).

Media coverage of displacement began with the very first struggle against the construction of a hydroelectric power plant near *Mulshi* in Maharashtra. The Times of India attempted a balanced coverage of the issue by presenting the arguments of the protesters and also the promoters of the project. The Times of India dated May 02, 1921 published five arguments against the project and seven arguments in favour of the project (Gadgil & Guha, 1995:69-70). The report of the Times of India is a classic case of a newspaper taking a neutral stand with regard to a controversial issue. This kind of balance that the media take on vital issues has been a subject of debate which is highly relevant in the context of media coverage of the issue of displacement by development projects.

While most media organizations want to address the environmental problems through objective reporting¹, some of them have proclaimed themselves as environmental advocates. Objectivity in environmental reporting means that media often attempt to distance themselves from any struggle aimed at effecting a change in public consciousness, 'taking refuge instead in the objectivism of science' (Killingsworth & Palmer, 1992: 149). Journalists thus see themselves as neutral and ironic voice, willing to produce news only if the scientific evidence concerning environmental and

displacement problems are sufficiently powerful and unambiguous. But Friedman (1991) has found that very few reporters are sufficiently well informed to be able to evaluate the 'scientific standing' of evidence.

Reporting objectively also means that journalists rarely express the content of environmental stories in overtly political terms, opting instead for news frames that emphasise conservation, civic responsibility and consumerism. Presenting events in historical and social context would take too much time or space. Lowe and Morrison (1984) argue that a major attraction of environmental issues for the media is that they can be depicted in non-partisan terms, allowing journalists to subversively foster environmental protest at the same time as appearing to maintain a politically balanced stance. This means that environmentalists and their opponents are given equal space or time in the media without attempting to resolve who is right. In such a situation, it becomes difficult for the environmentalists to convince the public that an 'issue' in fact is a 'problem' (Hannigan, 1995).

Those who argue that media should take an active part in environmental protection say that reporting accurately what the sources say can effectively remove responsibility for their stories onto their sources. The ideal of objectivity is rejected on the ground that it encourages uncritical reporting of official statements and those of authority figures. In this way, 'the individual biases of journalists are avoided but institutional biases are reinforced' (Beder, 1998: 204). Objective reports represent society's dominant values, largely agreed upon by government, industry and other institutions including the media.

Media have been called upon to abandon their notions of balance and become advocates if people are to be protected against the onslaught of harmful industrialization (Sharma, 2010). Lester Brown (cited in Detjen, 1991, p.94) who favours advocacy in journalism argues that the time is running out and one cannot afford to wait for the audience to come to their own conclusions. Advocacy is strongly recommended as the media have the ability to educate millions of people. Advocacy is considered as a means through which further damage to the environment and to communities can be prevented.

However, Detjen (1991) argues that though the media coverage of environmental issues is often lacking, advocacy journalism is not an answer. Detjen who was the founder president of the IFEJ believes that advocacy will lead to erosion of credibility. Journalists consider it important to maintain their tradition of healthy scepticism, continuing to question government, corporations and even environmental groups. The code of Asian Forum of Environmental Journalists (AFEJ) adopted in 1998 says, “The journalist should not be influenced on environmental issues by vested interests—whether they are commercial, political and governmental or non-governmental. The journalist ought to keep a distance from such interests and not ally with them. As a rule, journalists are expected to report on all sides of any environmental controversy” (Asian Mass Communication Bulletin, 1998: 2).

Newspapers have not taken kindly to those protesting against displacement. Leaders of movements demanding stopping of projects before adequately planning for rehabilitation were dubbed ‘militant’, ‘obstinate’ and ‘unreasonable’ (The New Indian Express, July 12, 1999). The anti-displacement campaigner were maligned as ‘merry makers’, ‘city dwellers’ and ‘romantic environmentalists’ (The Times of India, December 23, 2012). While newspapers may have remained neutral in many cases, they have taken keen interest in the completion of some projects (Warrier, 2010). The subsistence-oriented peasants who opposed projects that would displace a large number of people were presented as static and backward whereas those in favour of projects were presented as forward-looking, dynamic and progressive, working towards national goals of development (Gadgil & Guha, 1995).

One of the ways in which media shape public opinion is by framing events and issues in particular ways. Framing involves presenting and defining an issue. A frame is a central organizing idea that gives a sense of relevant events, suggesting what is at issue’ (Gamson & Modigliani, 1989). It helps media audience make sense of what is going on. Many researchers have applied numerous frames to the study of the media content although framing theory is less frequently used in communication research as compared to

other communication theories (Baran & Davis, 2008; Goffman, 1974).

Frames function as interpretative schema to make sense of and discuss an issue. Journalists use frames to condense complex events into interesting and appealing news reports, and policy-makers use frames to define policy options and reach decisions (Getlin, 1980; Scheufele, 1999). Frames help journalists simplify complex issues by focusing attention on certain considerations and arguments. They present a certain dimension of a complex topic by excluding an alternative frame (Gamson & Modigliani, 1989).

The concept of framing is also used in combination with other concepts such as agenda setting or priming (Iyengar & Kinder, 1987). McCombs, Shaw, and Weaver (1997) suggested that framing was an extension of agenda setting. They used the term second-level agenda setting to describe the impact of the salience of characteristics of media coverage of audience interpretation of new stories. There are several studies that have referred to framing, agenda setting, and priming without differentiation (Popkin, 1994).

Displacement issues can be extraordinarily complex, as studying them requires understanding of issues related to science, law, politics, history, ethics, economics, and international relations as well. Sociologists have studied anti-displacement movement as a part of the New Social Movements (NSMs). Researchers have studied how ‘environmental problems’ are constructed by the media as social problems (Hannigan, 1995). Chapman et al., (1997) had found that while the Indian language newspapers were perceived as ‘pro-development’ the English newspapers were perceived as ‘pro-environment.’ The indication was that the English newspapers which had a very high percentage of urban and upper-middleclass readers were pro-environment whereas Kannada newspapers mostly read by middle and lower middle classes were pro-development.

The present study will benefit from the concepts and methodological approaches sociologists and political scientists have worked with. Media coverage is needed for the movements like the anti-displacement movement for mobilization of political support, legitimization (or validation) in the mainstreams discourse, and to broaden the scope of conflicts (Barker,

2008). Consequently, the quality and nature of the media coverage that movements obtain strongly influences how they are perceived in the public eye.

Despite the fact that Karnataka has been one of the few states where anti-displacement movement has taken deep roots (Rai, 1999) very little investigation has been done on how the media have reported it over the years. Karnataka has been a witness to many anti-displacement struggles since the late 1970s (Hiremath, 1988; Kanavalli, 1991). Mega projects and special economic zones have displaced several thousand people in the coastal districts and the districts bordering the Western Ghats. Although media in Karnataka have been reporting displacement issues for the last three decades there have hardly been any content analyses of news related to displacement. Some studies on reporting environment have included displacement as one of the categories but few have looked at coverage of displacement as the main focus of investigation.

OBJECTIVES

The general objective of this study is to examine the coverage and framing of news related development induced displacement in daily newspapers

The following are the specific objectives of the study

- To analyze the extent of coverage given to news of displacement.
- To find out the frames within which displacement news get interpreted in newspapers.
- To find out the news sources and their relationship with the framing of displacement issues.
- To investigate the language divide if any with regard to coverage of displacement news between English and Kannada dailies.

METHODOLOGY

In order to analyze the coverage and framing of displacement and use of sources a content analysis of eight newspapers was carried out. Four major English dailies and four major Kannada dailies with statewide

circulation were chosen for the study. The English newspapers selected were The Hindu, The Deccan Herald, The New Indian Express and The Times of India and the Kannada newspapers chosen were *Prajavani*, *Kannada Prabha*, *Vijaya Karnataka* and *Samyuktha Karnataka*.

To select a sample for content analysis a higher frequency of appearance of news in the newspapers is necessary (Stempel, 1958; Budd et al., 1967; Ahmed, 1996). For analyzing the content related to politics, crime, sports, economics a smaller sample would be adequate as the frequency of appearance of such news is very high (Brooks et al., 1976). But when the frequency of appearance of news of displacement is very low a census becomes necessary. All issues of the eight newspapers published between May 01, 2013 and April 30, 2015 were selected. It was expected that the two-year period would produce useful data for analysis. Each item was numbered, measured in terms of space devoted to it, and classified into different categories on the coding sheet.

All news items on environment and displacement induced by development projects published between May 01, 2013 and April 30, 2015 were examined. The unit of analysis was a news story. Only those stories that appeared in the main section of the newspaper were considered for analysis as supplements were not published by all newspapers and were focused on diverse subjects. Environmental stories were first identified and then the displacement stories among them. Only those stories that referred to displacement by development projects like dams, mines, power plants, industries, ports and military base were considered as stories about development induced displacement. Displacement due to internal conflicts, natural disasters and ethnic violence was excluded in the analysis.

In order to operationalize frames the headlines of news stories and the lead paragraphs were considered. When the lead paragraph appeared unclear the second paragraph or paragraph that followed was considered. Based on the studies carried out in the past three types of frames were chosen for the purpose of analysis. These were aspect frames, functional frames and scope frames.

One of the questions encountered in a content analysis is what should be the base of analysis. One could take either the amount of space (measured in terms of column centimeters) or the frequency count of items. Stevenson and Cole (1982) and Ahmed (1992) have shown that whether one takes space or frequency count of items the results would be the same. Since a significant positive correlation (Spearman rank-order correlation coefficient of above .924) was found between the amount of space and the number of items it was decided to analyze the content on the basis of frequency count of items.

ANALYSIS

Coverage of displacement news

Environmental content in newspapers has generally received low coverage in media as has been shown in several studies in the past. In the eight sample newspapers, (Table 1) environmental news accounted for less than one percent of the total news. Environmental stories in the two-year period accounted only for 0.52 percent of the total number of stories published. The *Deccan Herald* carried the highest percent (0.71%) of environmental news followed by *The Hindu* (0.61%). *The New Indian Express* and *The Times of India* had the lowest coverage of environmental news. It is interesting to note that highest and lowest coverage was found among the English newspapers. Of the four Kannada newspapers, *Kannada Prabha* had the highest coverage and the *Samyukta Karnataka* the lowest.

The coverage of environmental issues went down from 0.63 percent in the year 2013-14 to 0.39 percent in the year 2014-15. With the sole exception of *Samyukta Karnataka* all newspapers had higher percentage of environmental news in the year 2013-14 as compared to the year 2014-15. The *Deccan Herald* (0.93%) and *The Hindu* (0.78%) had the highest coverage in the year 2013-14. *The Times of India*, the largest circulated and the most widely read newspaper, had only 0.18 percent of the stories on environment in the year 2014-15. The coverage in this newspaper had declined from the previous year (0.48%). In the year 2013-14 *Prajavani* was ahead of other Kannada newspapers in covering environmental problems (0.7%).

Table 1: Environmental News in Newspapers during 2013-2015

News Paper	May 2013-April 2014			May 2014-April 2015			Total		
	All news Items	Environmental news	% of environmental news	All news Items	Environmental news	% of environmental news	News items	Environmental news	% of environmental news
Deccan Herald	32718	303	0.93	30202	146	0.48	62920	449	0.71
The Hindu	31709	246	0.78	29312	126	0.43	61021	372	0.61
The New Indian Express	28193	108	0.38	24792	64	0.26	52985	172	0.32
The Times of India	23147	110	0.48	25617	46	0.18	48764	156	0.32
<i>Prajavani</i>	23233	162	0.7	22105	107	0.48	45338	269	0.59
Vijaya Karnataka	21617	131	0.61	21105	83	0.39	42722	214	0.5
Kannada Prabha	21518	143	0.66	20699	109	0.53	42217	252	0.6
Samyukta Karnataka	24115	98	0.41	21930	92	0.42	46045	190	0.41
Total	206250	1301	0.63	195762	773	0.39	402012	2074	0.52

What is clearly indicated is that there was no significant difference among the newspapers with regard to coverage of environmental news in two years. Low coverage of environmental news is attributed, among other factors, to the complex nature of environmental issues, professional norms and media's links with the industry (Bavadam, 2010) and the media have been reactive than being proactive in writing about environmental consequence of industrial policies (Sharma, 2010).

During the two-year period, one problem that dominated the newspaper coverage of environmental issues was deforestation. The other problems, with the exception of global warming and displacement, accounted for less than seven percent of all stories on environment. While the highest percent of stories (43.8) were about deforestation, the lowest percent of stories were about air pollution (Table 2). Displacement accounted for 17.4 percent of the environmental stories. Global warming received the third highest coverage with 16.1 percent. The higher coverage of displacement stories could be linked to the increasing number of dams, industries, infrastructure projects and special economic zones. One issue that is being hotly debated in media is the problem of global warming.

Table 2 : Environmental Issues in Newspapers

Environmental issues	Frequency	Percent
Air pollution	32	1.5
Water pollution	42	2.0
Deforestation	908	43.8
Wildlife endangerment	103	5.0
Solid waste	127	6.1
Nuclear Hazard	70	3.4
Sea pollution	42	2.0
Global warming	334	16.1
Loss of biodiversity	56	2.7
Displacement	360	17.4
Total	2074	100.0

A lot of efforts are being made globally, nationally and locally to reduce production of greenhouse gases that cause global warming. Climate change is also on the agenda of not only international forum but also on the agenda of regional and local governments. A huge gap existed between deforestation and global warming and displacement. Solid waste received the fourth highest coverage of 6.1 percent followed by wildlife endangerment with 5 percent. After threat to wildlife came nuclear hazard with coverage of 3.4 percent. Biodiversity loss that has been the subject of international and national debate received 2 percent coverage. Water pollution and sea pollution appeared in only 2 percent of the environmental stories each. It is clearly indicated that deforestation has received the highest attention of newspapers, followed by global warming and displacement although at a huge gap.

Displacement news

Between May 2013 and April 2015, there were 360 items in newspapers that were categorized as news of displacement. As shown in Table 2 these items constituted 17.4 percent of the environmental news found in all the issues of newspapers in the two year period. The remaining 82.6 percent of the environmental news was about other environmental problems including

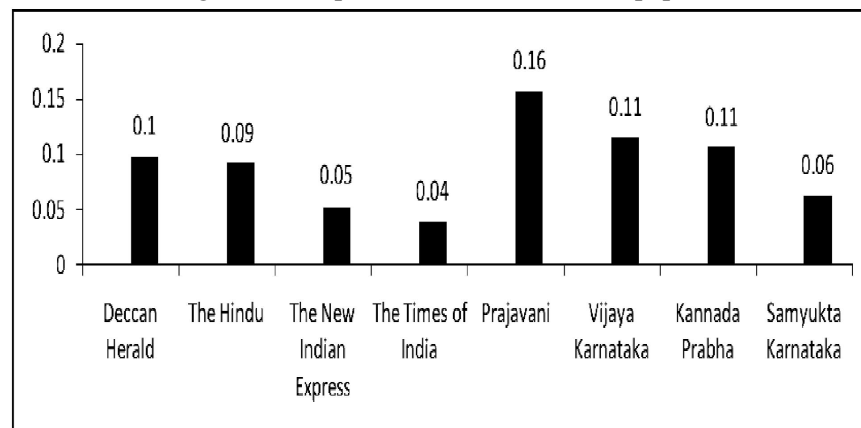
deforestation, global warming, big dam, and mining, threat to wild life, biodiversity loss, air pollution and water pollution. As shown in Table 3, of the eight newspapers, *Prajavani* had highest percent (0.16) and the *The Times of India* lowest percent (0.04) of the displacement news. *Prajavani* was followed by *Vijaya Karnataka* (0.11%) and *Kannada Prabha* (0.11%) which carried the same amount of news.

Table 3: All News and Displacement News in Newspapers

Newspaper	All news items	Displacement news	% of Displacement news
Deccan Herald	62920	62	0.1
The Hindu	61021	57	0.09
The New Indian Express	52985	28	0.05
The Times of India	48764	19	0.04
<i>Prajavani</i>	45338	71	0.16
Vijaya Karnataka	42722	49	0.11
Kannada Prabha	42217	45	0.11
Samyukta Karnataka	46045	29	0.06
Total	402012	360	0.09

The Deccan Herald had the highest percent of displacement news among the English newspapers and the 3rd position when compared to all the papers. *The Hindu* ranked 4th among all the newspapers and 2nd among the English newspapers in term of coverage of displacement news. *Samyukta Karnataka* ranked 5th (0.6 %) among all the newspapers and 4th among the four Kannada newspapers. *The New Indian Express* and *The Times of India* had 6th and 7th positions respectively. The largest circulated and the widely read newspaper *The Times of India* not only had the least percentage of environmental news but also displacement news. Among the newspapers there were noticeable differences with regard to the coverage given to environmental news and within the environment news to the news about displacement.

Figure 1 : Displacement News in Newspapers



It is interesting to note that Kannada newspapers (0.44 %) carried more displacement news than English newspapers (0.28%). Kannada newspapers have circulation reaching into the remote parts of districts whereas the circulation of the English newspapers is concentrated in and around big cities. Since most of the incidences of displacement take place in the far-flung areas they have better chance of getting reported in Kannada newspapers. It is clear that more displacement news was found in Kannada newspapers than in English newspapers although the difference in terms of the quantity of coverage was not significant.

Of the 8 newspapers, as shown in Table 4, the coverage of displacement among *Deccan Herald*, *The Hindu*, *The New Indian Express* and *The Times of India* had significant correlation. There was a significant correlation between *The Hindu* and *The Times of India* and *Vijaya Karnataka*. *The New Indian Express* had significant correlation with *Prajavani*, *Vijaya Karnataka* and *Kannada Prabha* but hardly any relationship with *Samyukta Karnataka*. The coverage in *The Times of India* had significant positive correlation with *Deccan Herald* and *The Hindu* and no relationship with any of the Kannada newspapers. It was only between *The Times of India* and *Prajavani* that a slightly negative correlation was found although not significant. *Prajavani*'s coverage had significant correlation with that of *The New Indian Express*, *Vijaya Karnataka* and *Kannada Prabha* but

hardly any relationship with *Samyukta Karnataka*. *Vijaya Karnataka*'s coverage of displacement issues was correlated with the coverage in *The Hindu*, *The New Indian Express* and *Prajavani*. Its coverage had no significant relationship with the two other Kannada newspapers.

Table 4 : Correlation Coefficients between the Newspapers in Covering Displacement News

Newspapers	The Hindu	The New Indian Express	The Times of India	Prajavani	Vijaya Karnataka	Kannada Prabha	Samyukta Karnataka
Deccan Herald	.596**	.605**	.573**	.381	.381	.256	.247
The Hindu		.301	.511*	.198	.438*	.327	.175
The New Indian Express			.403	.567**	.527**	.435*	.382
The Times of India				-.072	.207	.064	.277
Prajavani					.605**	.446*	.063
Vijaya Karnataka						.335	.322
Kannada Prabha							.140
** . Correlation is significant at the 0.01 level							
* . Correlation is significant at the 0.05 level							

Samyukta Karnataka's coverage of displacement stories had no significant correlation with the coverage in any other newspaper. Of the 28 combinations of newspapers only 10 combinations had significant correlations suggesting that newspapers differed in publishing issues related to development induced displacement. Between English and Kannada newspapers a significant correlation ($r_{s=.510}$) was found at .05 level of significance indicating that the language of the newspaper did not influence the publication of news stories about displacement.

The months of June and July accounted for the highest percent of displacement news in the two-year period (Table 5). The two months fall in the monsoon period and the issue of displacement is likely to find space in newspapers as the water levels rise in big dams. As big dams displace a large number of people (Negi & Ganguly, 2010) the issue is likely to be debated in the media around the time when the threat of submergence looms large.

Protests against the big dams and demands for better compensation and rehabilitation are usually noticed in the monsoon months. June is also the month in which the World Environmental Day is celebrated on the occasion of which issues related to the environment are likely to be reported and discussed in newspapers. The only other month in which more than 10 percent of the displacement news was found in the newspapers was in April. The Earth Day is celebrated on April 22 on the occasion of which a lot of events are held highlighting the need to protect the earth and natural resources.

Table 5: Displacement News Month-Wise

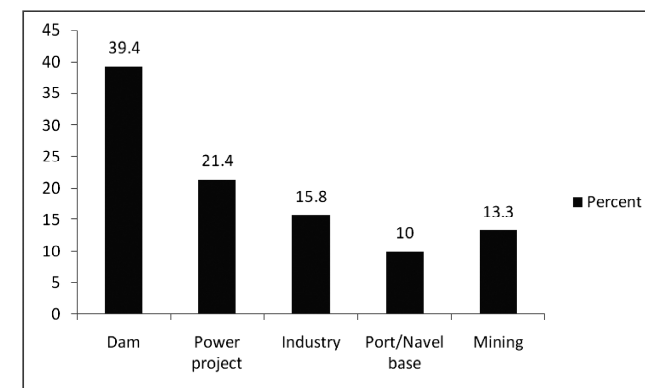
Month	Frequency	Percent
May	19	5.3
June	58	16.1
July	59	16.4
August	23	6.4
September	24	6.7
October	34	9.4
November	32	8.9
December	10	2.8
January	26	7.2
February	19	5.3
March	19	5.3
April	37	10.3
Total	360	100.0

The Earth Day that was first celebrated in the year 1970 has been identified as the day on which the environmental movement began globally. Several issues related to the environment including displacement are discussed throughout the world. The lowest coverage of 2.8 percent was found in the month of December. There does not seem to be significant variation in the coverage of displacement news during the other months.

Causes and Risks of Displacement

Of all the major projects it is the dams that have displaced the largest number of people in India. That the dams continue to displace people is reflected in the coverage given to them. A majority of the news stories (39.4) were about displacement by big dams (Figure 2). Many studies endorse the premise that large majority of the people have been displaced by big dams. Of all the environmental movements it is the movement against the big dams that has remained active for more than three decades (Mathur, 2013). As big dams displace a large number of people organized struggle have been common in many parts of the country. Since a large majority of the displaced people have not yet been properly compensated and rehabilitated they continue to carry on periodic struggles to get the government to act. Displaced persons petition the government and hold demonstrations frequently in order to highlight their plight. Therefore, of all the displacements it is the displacement by big dams that continues to get the attention of the newspapers.

Figure 2: Cause of Displacement as Reported In Newspapers



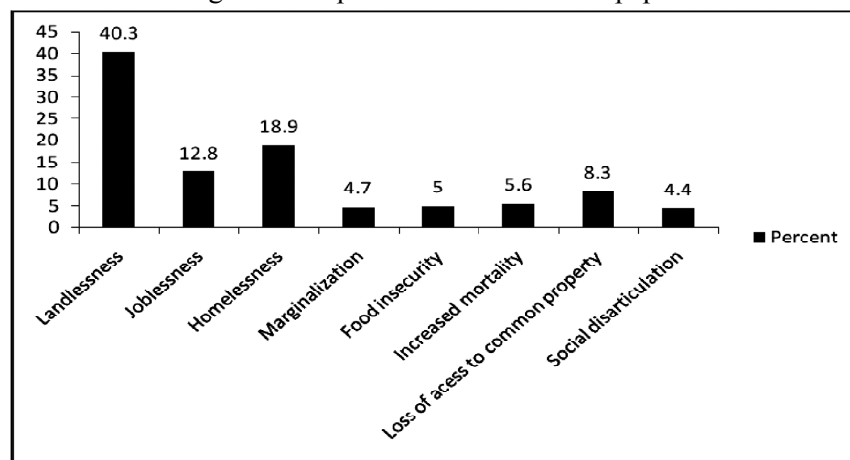
Power projects other than big dams accounted for 21.4 percent of the displacement stories. In the recent past many thermal and nuclear power projects have come up in several part of the country including Karnataka that have caused displacement of several thousand families. There has been rapid industrial growth in the last two decades with Karnataka becoming one of the key hubs of mega industries. Establishment of these mega

industries involves acquisition of land and displacement of the landowners. Besides legal battles against land acquisition, there are also frequent demonstrations that are held to get media attention.

As many as 15.8 percent of the news stories were about displacement by industries. Of all the displacement stories, 13.3 percent were about displacement due to mining. After big dams, power projects and industries it is mining that is featured as an issue in the newspapers. Air and naval ports in Karnataka have also led to forcible eviction of people from their homes. The Seabird Naval Base in Karnataka has also displaced thousands of fishermen and farmers families in Uttara Kannada district. Ten percent of the displacement news was about people suffering due to loss of land, improper rehabilitation and denial of basic amenities.

Eight risks that the displaced persons generally face have been identified by Cernea (2002) who has been studying the problems of the displaced people for many years. These eight risks were identified in the displacement stories carried by the eight newspapers. Although displaced people face most or all of these risks one risk that was found to be the dominant was landlessness. Landlessness as a major problem was found in 40.3 percent of the displacement stories (Figure 3). This is one of the most visible problems that the displacement causes. Loss of property and the problems that follow it tend to be discussed in media more often than any other problems.

Figure 3: Displacement risks in newspapers



Homelessness was the second most frequently reported problem (18.9%) that was found in the newspaper stories about displacement. Peoples' houses getting submerged or demolished make good stories for the media. There have been many cases of people living in makeshift shelter for decades without proper housing. Displaced people lose their traditional occupations and are unable to pursue other professions as they lack necessary skills for them. Joblessness was the third-most frequently appearing problem (12.8) in the newspapers. Joblessness leads to disempowering of those who were dependent on the jobs that their communities provided. The other five problems accounted for 10 percent of the stories each. Social disarticulation was the least frequently used frame as compared to the other frames. These are the stories that refer to displaced people from one community being scattered in different places. People lose their ancestral shrines and graves, mountains and rivers considered holy when they are displaced.

Despite the fact that displacement pushes people to social oblivion, newspaper do not seem to have considered it as important as landlessness, joblessness and homelessness. Among the five risks that received less than 10 percent coverage each, loss of access to common property was slightly more frequently used (8.3). Only 5.6 percent of the news was focused on increased mortality, which brings into focus higher death rate among the displaced people due to lack of amenities. Food insecurity as a problem was found in only five percent of the stories. Displaced people face severe food security risk as the traditional growing and collecting of food is severely affected. That there is marginalization of displaced people is less frequently found in the news stories. Displaced people are marginalized to such an extent that they are unable to use their earlier-acquired skills at the new location leading to human capital becoming obsolete.

Except for social disarticulation, there was noticeable variation between the newspapers in the two languages. There were significant differences between English and Kannada newspapers with regard to the covering the risks of development-induced displacement.

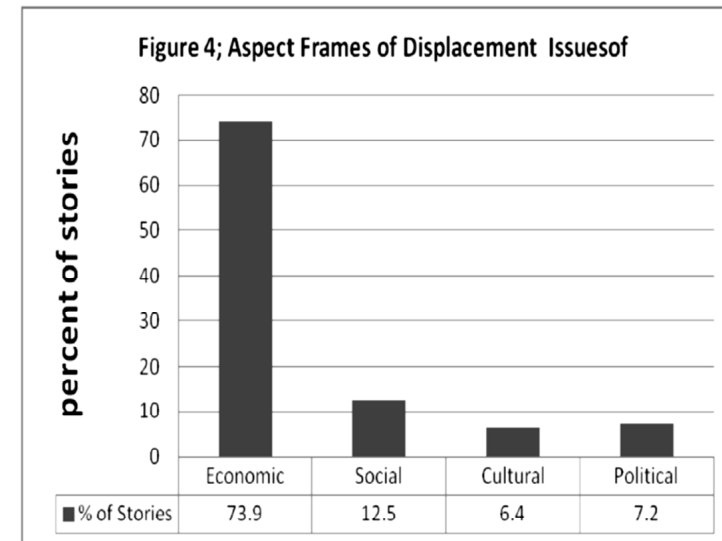
Framing

Media shape public opinion by framing events and issues in particular ways. Framing involves presenting and defining an issue. A frame is an organizing idea that helps make sense of events by suggesting what is at issue (Gamson & Modigliani, 1989). Displacement news can be framed in different ways. The frames identified in this study are based on aspect, risk, function and focus of displacement stories.

Displacement has many aspects to it. In order to understand the depth and breadth of the issue of development-induced displacement one has to look into several aspects which are considered important. Studies in the past have shown that economic and political aspects of environmental issues have dominated the newspaper pages (Nambiar, 2014). The present study shows that economic aspect of the displacement issues dominated the newspaper coverage (Figure 4). Nearly one-fourth of the displacement news was primarily focused on the economic aspect of problem. Stories mainly focused on issues related compensation, granting of land and people's suffering from lack of means of livelihood. Newspapers tend to reduce the entire problem of displacement to mere economics of compensation without looking into the human angle (Nambiar, 2014). The complex issues surrounding the problem of displacement are not given adequate and balanced coverage.

Social frame of displacement was featured only in 12.5 percent of the stories. Breaking up of communities and impact of displacement on social relationships which are an important factor of any society did not get due attention in newspaper stories. Cultural and political aspects of displacement which are important in the context of disintegration of cultural practices and marginalization of displaced groups of people found very little space in newspapers. Whenever large scale displacement takes place it led to destruction of communities and cultures (Penz et al., 2011) but such an aspect rarely gets media attention.

Figure 4: Aspect Frames of Displacement Issues

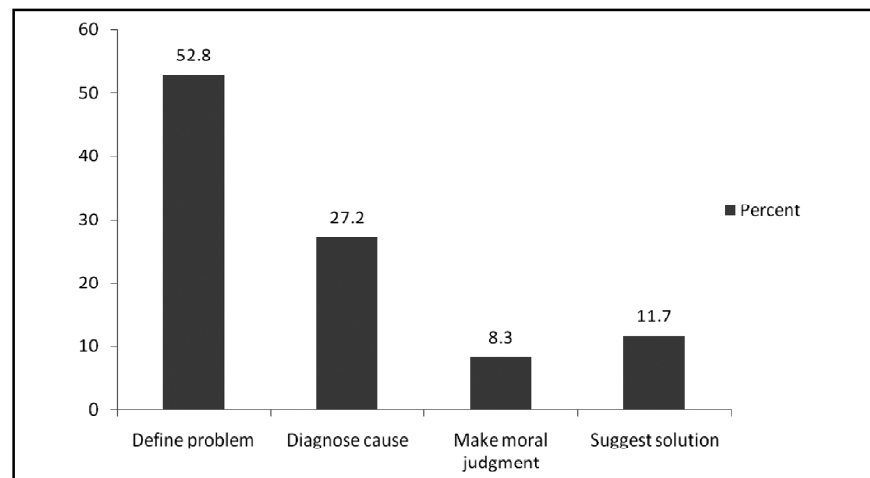


Culture is an important aspect of the overall wellbeing of the people but it was rarely seen in the stories of displacement. Many of the displacement issues are connected with politics as building of mega projects is the result of political decision making at different levels. Only 7.2 percent of the displacement stories referred to political aspect of the issue despite the fact that it is politics that dominates newspapers columns in Indian newspapers. Aspects other than the economics require a lot of time-consuming research and fieldwork which are not always possible in a situation where a journalist is expected to do the regular assignments. The economic-related issues gets covered more often as information and statistical data collected from authoritative sources. While economic loss is quantifiable the other aspects need to be described with case studies and analysis of the situations the displaced people live in.

According to Entman (1993) frames which are found at the top of the inverted pyramid of news perform four functions: defining the problem, diagnosing cause, making moral judgment and suggesting remedies. Among these functional frames (Trumbo, 1996) problem definition dominated the displacement stories. As shown in Figure 5 as many as 52.8 percent of the

stories explained the negative and positive consequences of displacement that constituted problem definition. It is interesting to note that more than a half of the stories did not go beyond defining the problem. In his analysis of news about climate change Trumbo (1996) has found problem definition as a major frame. The percent of stories that diagnosed causes with evidences against displacement or presented evidence in favour of displacement was 27.2. These newspaper stories provided details of reports and documents that emphasized the gravity of the problem of displacement or presented arguments about the inevitability of displacement and its possible advantages.

Figure 5: Functional Frames of Displacement Issues



Nearly 11.7 percent of stories made specific suggestions with regard to how compensation should be given, what rehabilitation package should be given, what jobs could be given and how their basic needs should be addressed. Making moral judgment was the frame of 8.3 percent of the stories on displacement. These included general statements about action that needed to be taken in terms of policy or statements against giving into the demands of the people who are going to lose their lands. Of the four functional frames defining the problem and diagnosing the cause accounted for 80 percent of the displacement stories. A very small percent of newspaper stories on displacement had frames of moral judgment and suggestion of solution.

On the basis of their focus of the news stories episodic and thematic frames can be identified (Gross, 2008; Iyengar, 1991; de Vreese et al., 2001; Iyengar, 2010). While episodic frame is focused on events that are related to an issue, thematic frames are focused on the broader context of events and present collective, abstract and general evidence about an issue. As shown in Table 6 a great majority of the displacement stories (75.3) had episodic frames suggesting that newspapers only reported events and did not provide context of those events. Events happen to be the principal diet of a journalist because an issue is reported when someone holds a hearing, when an irate citizen complains about pollution, when a meeting is held or when a government body makes a decision or when a suit is filed (Dunwody and Griffin, 1993). Event orientation allows sources to control the process and the frames besides absolving journalists from attending to the big picture.

Only 24.7 percent of the stories were in thematic frame, which provided broader context that included details about consequences of displacement drawing the attention of the readers to the discourse on development (Table 6). Those stories that provided context to the issue appeared more frequently in the English newspapers (33.3) rather than Kannada newspapers (17.9). English newspapers have given more importance to the causes and consequences of displacement than Kannada newspapers. The differences between English and Kannada newspapers in giving episodic and thematic frames to the stories of development were significant.

Table 6: Episodic and Thematic Frames in English and Kannada Newspapers

Frames	English	Kannada	Total
Episodic frame	106 66.7%	165 82.1%	271 75.3%
Thematic frame	53 33.3%	36 17.9%	89 24.7%
Total	159 100.0%	201 100.0%	360 100.0%
$\chi^2 = 11.347$ df= 1 sig= .001			

The news coverage was strongly biased towards an episodic interpretation in which news displacement issues were not placed in a broader context. Iyengar (1991) suggested that norms and standards within news organizations and news production reinforce episodic framing. This practice 'simplifies complex issues and presents them as mere events.

The reports in newspapers looked topical, disorganized and isolated rather than general and contextual. Iyengar found that audience exposed to episodic news were less likely to consider society responsible for what has been caused, and those exposed to thematic reports were less likely hold individuals responsible for what has been caused. Audiences exposed to episodic framing tend to put the blame on the individual for the origin of a problem whereas the audiences exposed to thematic framing tend to see a problem in the context of government policies and other factors.

Nambiar (2014) had also found that media frames with regard to sustainability and environmental issues were episodic as the focus was more on the incidents that happen in society rather than patterns of themes. As has been seen in the previous studies domination of episodic frame was seen in the present study also.

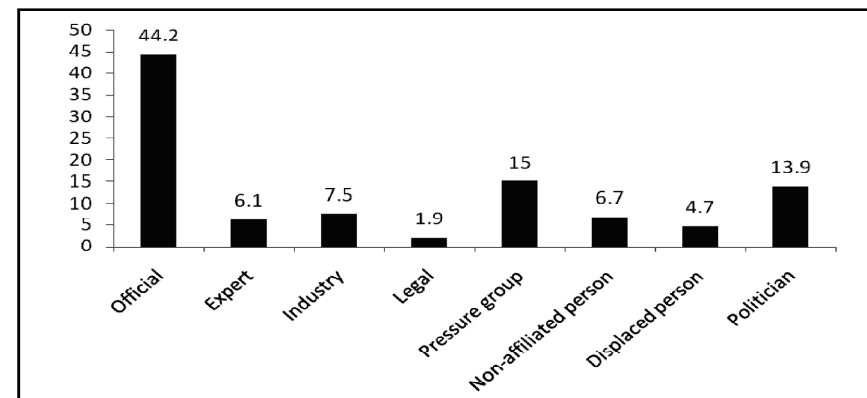
Sources and Frames of Displacement News

Sources play a key role in framing of news. Sources exercise substantial control over story frames (Dunwoody & Griffin, 1993) and become 'primary definers' (Hall et al., 1978) of key issues. Research carried out in many countries suggests that official sources are cited by print journalists and broadcasters much more often than environmental groups (Gandy, 1989; Einsiedel, 1988; Greenberg et al., 1989; Wang, 1988; Hansen, 1993; Nohrstedt, 1991; Anderson, 1993; Einsiedel & Coughlan, 1993; Gooch, 1996). Although an average of 1.4 sources were found per story only the prime source—the source quoted in the headline or the lead—was considered for the purpose this study. While some stories had single source, others had multiple sources. As had been shown by previous studies a majority of the sources (44.2%) were official sources, which suggest that they play an important role in framing displacement news in newspapers. Official sources are usually considered as authentic sources

and what they say is considered reliable (Hall et al., 1978). Especially in cases of displacement it is the government agencies that are involved in giving compensation and resettling people. Sources other than official sources were less frequently used in the news stories. As the government plays the dual role of both promoting development and protecting the environment, its officials are often quoted as sources.

Pressure groups that consisted of environmental NGOs, groups created to resist building of projects, organizations formed to fight for higher compensation and better rehabilitation accounted for 15 percent of the sources used in the displacement stories. These groups often organize protests, demonstrations, address press conferences, and also issue pamphlets which often become the material for news stories. They also present views and facts that are in contrast with those of the officials. Interestingly politicians (13.9%) occupy the third position as sources of displacement news in newspapers. Politicians who make policies as part of the government or influence them when they are not part of the government are quoted more often than the displaced persons are. Displaced persons often look up to politicians for support and at the same time industries try to make use of them for protecting their interests (Penz et al., 2011). Industrial sources occupy the fourth position (7.5 %) as the sources of displacement news. Mega industries, power projects and special economic zones have displaced lakhs of people in the recent decades.

Figure 6: Sources of Displacement News



The voices of the industries are more often heard than the voices of the displaced persons and those who have expertise on displacement issues. Industrial sources have resources and skilled media relations people to reach out to the media where they find space and time (Lokesh, 2010).

Only 4.7 percent of the sources were displaced persons. Despite the fact that they were the victims of the development projects their voices were less frequently heard than those of politicians. It should be noted that quoting displaced persons does not mean that the newspapers provide their perspective. They are usually quoted along with other sources and are rarely used as the major sources. In many cases their reactions are sought for the statement or announcements made by officials. Experts were less frequently quoted than industry representatives suggesting that the voice of the industries was heard more often than the voice of the experts. Although many displaced persons and their organizations carried on prolonged legal battles legal source quoted accounted for only in 1.9 percent of the total sources.

While information given by officials was more often used without reactions from the pressure groups or displaced persons, the statements of the pressure groups or displaced persons were seldom carried without the reactions of the officials. Non-official sources were seen as far less credible than pressure groups. Independent sources that were likely to provide objective view of the displacement issues were also not quoted often.

That the newspapers doubted the credibility of non-official sources was evident in the way they were quoted. The terms like ‘claimed’, ‘argued’, ‘accused’ and ‘contended’, ‘vowed’ and ‘alleged’ were often used whenever non-official sources were quoted. These terms raise doubts in the minds of the readers about the reliability of their statements. By using such terms the newspapers express skepticism on the information given by the non-official sources. In the news stories officials ‘said’, ‘explained’, ‘asserted’, ‘explained’, ‘observed’, ‘stated’ and ‘clarified’ when they were quoted suggesting that they were speaking about a reality whereas the non-official sources were only expressing their opinion. Official sources seem to serve as legitimizing agents for the press. Without formal structures for news generation, non-official sources are often unable to gain access to press as

independent sources. The nature of the reporting of events invariably favours those considered authoritative at the expense of the protesting group. Without adequate access, their definition of displacement issues may be marginalized or ignored altogether.

Official sources were the major sources in all of the four aspect frames. What looks interesting is that official sources were quoted more often in stories of social frames than in stories of economic frames. Table 7 shows that as many as 64.4 percent of the stories with social frame had officials as sources whereas for stories with cultural frames the officials constituted 41 percent of the sources quoted. After officials the displacement stories in economic frame had 16.2 percent of pressure groups and 14.7 percent of politicians quoted as sources.

Table 7: Sources and Aspect Frames

Sources	Economic	Social	Cultural	Political	Total
Official	109 41.0%	29 64.4%	8 34.8%	13 50.0%	159 44.2%
Expert	16 6.0%	0 .0%	2 8.7%	4 15.4%	22 6.1%
Industry	19 7.1%	1 2.2%	4 17.4%	3 11.5%	27 7.5%
Legal	5 1.9%	0 .0%	2 8.7%	0 .0%	7 1.9%
Pressure group	43 16.2%	5 11.1%	3 13.0%	3 11.5%	54 15.0%
Non-affiliated person	18 6.8%	3 6.7%	1 4.3%	2 7.7%	24 6.7%
Displaced person	17 6.4%	0 .0%	0 .0%	0 .0%	17 4.7%
Politician	39 14.7%	7 15.6%	3 13.0%	1 3.8%	50 13.9%
Total	266 100.0%	45 100.0%	23 100.0%	26 100.0%	360 100.0%

All the displaced persons were quoted only in stories with economic frame despite the fact they are a rich source for writing stories with human angle. Their absence in other frames only points at the fact that the in the context of aspects other than the economic aspect the displaced persons did not matter at all as sources. Interestingly, 17.4 percent of the stories in cultural frame and 11.5 percent of the stories in political frame had industrial sources. In the stories of social frame the second most often quoted sources after official sources were politicians. The lowest percent of official sources were used only in stories that had cultural frame. Pressure groups which normally try to bring the attention of the government and the public to the issues other than economic issues had greater presence in economic stories than in other stories.

Although official sources were the prominent sources in stories with both episodic and thematic frames their presence was much higher in stories that had thematic frame. As much as 40.2 percent of the stories with episodic frame had official sources as major sources.

Pressure groups figured as the major sources in 15.9 percent of the displacement stories that were in episodic frame. As pressure groups are involved in petitioning the government and in protesting against displacement they are more likely to be quoted as sources. Agitations, demonstrations, sit-ins, hunger strikes get media attention, as they are events that fit into the definition of what makes news.

However, pressure groups had lesser presence in the stories (12.4%) with thematic frame where a broader and more comprehensive picture of the displacement problem was presented. It is interesting to note that politicians were more often (15.7) used than pressure groups as sources in displacement stories with thematic frames. Politicians get involved in those issues that concern their constituencies and those who have smaller constituencies tend to get more involved than those who have larger constituencies.

When a wider picture of a particular displacement problem is to be presented their opinions get quoted in the newspapers. Gadgil and Guha (1995) say that the politicians' interest in environmental issues is negatively

correlated with the size of their constituencies. A member of a legislative assembly has greater concern for the environmental issues than a member of the parliament as his constituency is smaller. Politicians also try to project themselves as promoters of development because of which they consider access to the media as very important.

Table 8: Focus frames and prime sources

Sources	Episodic	Thematic	Total
Official	109 40.2%	50 56.2%	159 44.2%
Expert	21 7.7%	1 1.1%	22 6.1%
Industry	21 7.7%	6 6.7%	27 7.5%
Legal/court	7 2.6%	0 .0%	7 1.9%
Pressure group	43 15.9%	11 12.4%	54 15.0%
Nonaffiliated person	19 7.0%	5 5.6%	24 6.7%
Displaced person	15 5.5%	2 2.2%	17 4.7%
Politician	36 13.3%	14 15.7%	50 13.9%
Total	271 100.0%	89 100.0%	360 100.0%
$\chi^2 = 13.632$ df=7 Sig= .058			

Experts, industries, and non-affiliated persons almost have equal representation (around 7%) as major sources in episodically framed displacement stories. Only 5.5 percent of the displaced persons were quoted as sources in stories that had episodic frame, which suggests that even

when events were reported they were rarely asked for their opinions. With the exception of official sources and politicians, all other sources were quoted less frequently in thematically framed displacement stories. Only 2.2 percent of the thematically framed stories had displaced persons quoted in them. Interestingly experts hardly had a mention as a source in stories with thematic frame. In using different sources for episodic and thematic frames there were no significant differences.

CONCLUSION

Environmental stories in newspapers constituted only a small percent of (0.52) of all news reported during the two year period. Displacement as one of the environmental issues was the second most covered issue after deforestation. But there was a difference of more than 26 percent between them suggesting that no other issue was as important as deforestation for the newspapers. As low as 0.9 percent of the total news in the newspapers was about issues of displacement. Displacement is a low salience issue as stories of displacement do not generally make front-page news. Deforestation is a dominant environmental theme in newspapers. A very low frequency of coverage of displacement even at a time when large numbers of people continue to be displaced is a matter of concern. A majority of the stories of displacement are about displacement of people by large dams. Although Kannada newspapers which have higher circulation and readership in the districts, taluks and villages comparatively carry a higher percentage of displacement news than English newspapers there are no substantial differences between the newspapers in the two languages. No adequate evidence was found to support the indications of the earlier studies that Kannada newspapers are pro-development and English newspapers are pro-environment.

Landlessness, homelessness and joblessness are the issues of displacement that are found frequently in newspapers. Marginalization and social disarticulation hardly appear as problems in the displacement stories.

Economic frame dominates the coverage of displacement news

indicating that social, cultural and political aspects are ignored. Communities and families breaking up, traditional systems getting disintegrated and people getting disempowered in the process have not received media attention. The economic aspect about which a lot of information is available finds greater space in newspapers even though the other issues form the core of the displacement problem.

Among the functional frames one frame that dominates displacement stories is 'defining problem'. This is an indication of lack comprehensive coverage of the problem. Newspapers mostly define the problem and do not frequently diagnose cause, make moral judgment or suggest solution. Orienting stories towards defining the problem is likely to prevent newspapers from presenting a comprehensive picture of displacement.

It is very clear that much of displacement news is episodic that describe events as they happen with no initiative taken by the newspaper to place the issue in perspective. The reports in newspapers tend to be topical, disorganized and isolated rather than general and contextual. A very small percent of the stories of displacement are in thematic frame that give depth and analysis. The norms and standards within news organizations and news production reinforce episodic framing which simplifies complex issues and presents them as mere events.

Official sources are the most dominant sources and the primary definers of displacement issues. Although pressure groups and politicians do play some role in shaping frames of displacement news the other sources are rarely found quoted. Displaced persons are rarely quoted as sources in spite of the fact they are involved in several of the events that get reported. Lack of resources among the groups of project-affected people hinders their effort to put forward their definitions of displacement issues through news media. Those who hold institutional power are able to sponsor frames that influence public discourse on displacement issues.

Officials were the most dominant source in all aspect frames. Interestingly the officials were quoted more often in stories of social frames than in stories of economic frames. Lack of balance in coverage of

displacement news was visible. Official bias permeates most stories of displacement in newspapers and that explains why a majority of the displaced persons do not see the coverage of issues favourable to them.

In both episodic and thematic frames the official sources were again the prominent sources. Much of the displacement news lacked completeness as its frames were influenced by the dominant official sources. The role of pressure groups and displaced persons in framing of the displacement news is insignificant.

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FOOTNOTE

1. The concept of objectivity in journalism first arose during the nineteenth century as part of the sweeping intellectual movement towards scientific detachment and the culture-wide separation of fact from value (Gitlin, 1980). Objectivity is still viewed as the cornerstone of journalistic profession.
2. Six decades after the Linganamakki dam was commissioned the displaced persons are still struggling for allotment of land. The *Deccan Herald* (30-09-2015, p.3) and *Vijaya Karnataka* (20-08-2015, p.4) reported that Shivamogga district forest and revenue officials have taken a decision to send a proposal to the Government of Karnataka to grant ownership of the land to the displaced persons. Displacement by big dams continues to make news for decades after their completion.

Regional Disparities in Financial Inclusion in Kerala: District-Wise Analysis

JATINDER KAUR

Abstract

Though Financial Inclusion efforts can be traced back to 1960s the term was explicitly used in India for the first time in 2005-06 when it was recognized as an important policy objective for promoting inclusive growth in the country. It was realized by the policy makers at the time of initiation of 11th Plan that despite persistent efforts to promote balanced regional development the disparities continue to rise in India. There was a widespread perception all over the country that disparities among states, within states, between rural and urban areas and between various sections of the community are steadily increasing in the past few years and that the gains of the rapid growth witnessed in this period have not reached all parts of the country and all sections of the people in an equitable manner. Thus, the 11th Plan laid stress upon promoting inclusive growth which continued to be the main objective of 12th Plan (2012-2017) as well and Financial Inclusion constitute an integral part of inclusive growth. Kerala along with Goa became the first 100% financially inclusive state in terms of opening of bank accounts. This paper is an attempt to measure financial inclusion level of the districts of Kerala by constructing a comprehensive Financial Inclusion Index (FII), incorporating 22 indicators representing three different dimensions of inclusive finance relating to branches, deposits and credit. The study covers 14 districts of the state for the year 2013. The results portray presence of glaring disparities in FII across different districts and 9 out of 14 districts have been found to be financially excluded when volume of deposits and credit is also considered along with number of accounts. Further, the maximum disparities have been found in the indicators pertaining to credit penetration.

Keywords: Financial Inclusion, Disparities, Deposits, Credit, Financial Inclusion Index

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INTRODUCTION

Financial inclusion efforts in India can be traced back to 1960s when the concept of social banking was introduced and 14 major commercial banks were nationalized in 1969 with an aim to convert the banking of classes into the banking of masses. In the early 60s the banking scene was characterized by concentration of banking business in metropolitan and urban areas with the large business houses claiming a major chunk of bank credit resulting into the neglect of priority sectors by the banks. So the banks were nationalized to promote banking services in the unbanked areas to bring about progressive reduction of disparities between the rich and the poor sections of people and between the relatively advanced and backward areas of the country. This phase of social control continued till 1990 and the banking sector experienced a phenomenal growth during this phase both geographically as well as in terms of providing facilities to the neglected sectors. The number of bank branches rose from 8262 in 1969 to 60220 in 1991 showing more than sevenfold increase resulting in significant decline in the population served per branch. A significant outcome of the branch expansion was that of the new branches opened; more than 64% of the new branches were opened in rural areas and only 8 % of the branches were opened in metropolitan areas. Further, the share of priority sector in total credit also rose from 14% to 37.7% over the same period. In 1991, India experienced an exceptionally severe balance of payment crisis and to overcome the same, embarked on the process of economic reforms with the financial reforms constituting an integral part of these economic reforms. The focus of banking policy reforms during the 1990s and up to the mid of the first decade of twenty-first century was more on creating a strong and efficient banking system by introducing competition in the banking sector through deregulations and decontrol. Then, since 2005 onwards the term “financial inclusion” has become an important policy objective and is considered as an important pillar of inclusive growth. Financial inclusion has been identified as a priority sector in the government’s

efforts to make the growth process more equitable and inclusive. For this Reserve Bank of India has undertaken number of measures to attract financially excluded people into the structured financial system like opening of no-frill accounts, simplification of KYC norms, introducing business correspondent model, mobile banking, financial literacy projects and latest being *Pradhan Mantri Jan Dhan Yojana* (PMJDY) launched by government on 28th August, 2014, which envisages universal access to banking facilities with at least one basic banking account (with zero balance) for every household. On 14th November 2014, Goa and Kerala became the first states in the country to achieve 100 percent Financial Inclusion under *Pradhan Mantri Jan Dhan Yojana* (PMJDY), along with three Union Territories (UTs) namely Chandigarh, Puducherry and Lakshadweep. These were declared as 100 per cent saturated in terms of coverage of all households with at least one bank account.

The state of Kerala has always been in the forefront in terms of executing various financial inclusion policies and plans. The state has experienced a great success in financial inclusion initiatives as compared to other states in India even before the launch of *Pradhan Mantri Jan Dhan Yojana*. CRISIL Inclusix (Vol. III), which measured the financial inclusion levels for 2013, ranked Kerala at the top in terms of financial inclusion amongst the states with Inclusix score of 88.9 (CRISIL Inclusix is measured on a scale of 0 to 100, with 100 indicating the maximum score achievable) and second amongst both states and UTs with Puducherry taking the top slot with a score of 89.4. Further, out of 14 districts, 13 districts appeared in the list of top 50 districts in terms of CRISIL Inclusix scores as depicted in the table below:

From Table 1 it is seen that six districts of the state achieved 100% financial inclusion and were placed on the top. However, an important point to be noted here is that Kerala, as a state may be on the top in terms of financial inclusion but within state, huge disparities continue to exist which is evident from the fact that Malappuram is placed at 114 rank with Inclusix Score of 64.9. Further, a pertinent point here is that CRISIL also has measured deposit and credit penetration on the basis of number of accounts only and did not consider the quantum/volume of deposits and credit into account. CRISIL used the following three dimensions represented by five parameters:

Table 1: Ranking of Districts of Kerala as per CRISIL Inclusix for the year 2013

District	CRISIL Inclusix Score	CRISIL Inclusix Rank
Alapuzha	100	1
Ernakulam	100	1
Kottayam	100	1
Pathanamthitta	100	1
Thiruvananthapuram	100	1
Thrissur	100	1
Idukki	90.2	17
Kasaragod	87.1	28
Palakkad	85.4	32
Kollam	85.2	33
Kannur	82.7	38
Wayanad	82.4	39
Kozhikode	81.2	43
Malappuram	64.9	114

1. Branch Penetration (BP):
 - Number of branches per lakh of population in a district
2. Credit Penetration (CP):
 - Number of loan accounts per lakh of population in a district
 - Number of small borrower loan accounts as defined by RBI per lakh of population in a district (small borrowers = borrowers with a sanctioned credit limit of up to Rs.2 lakh)
 - Number of agricultural advances per lakh of population in a district
3. Deposit Penetration (DP):
 - Number of savings accounts per lakh of population in a district

It is continually being argued by many that there is much more to financial inclusion than merely opening accounts because most of the time, these accounts remain dormant and declaring any region fully financially inclusive merely on the basis of each household having a bank account is not the right approach. There is a mixed reaction towards the *Pradhan Mantri*

Jan Dhan Yojana started in August 2014 and it is being debated that the scheme is no different from the earlier scheme “No-frill accounts” under which millions of accounts were opened and which later found to be dormant.

According to Rajesh Chakrabarti, Executive Director of the Bharti Institute of Public Policy at the Indian School of Business, the government “seems to be fighting the symptoms rather than the disease. The point is for the formal banking system to be present when needed and be superior in convenience and efficiency. However, the approach taken seems to be to lure people into banking through incentives and to hope that the habit sets in. The trouble is that once the sweetener goes away, day-to-day banking provides little benefit in convenience to many users at the bottom of the pyramid.”

S. Thyagarajan & Jayaram Venkatesan conducted a study in 2008 to analyze the results of the no frills financial inclusion drive in Cuddalore district of Tamil Nadu in terms of coverage by geographical and other categories, cost involved in account opening and maintenance as also the transactional usage behaviour of such accounts. The study also showed that only 15 percent of the customers were operating the accounts and bulk of the accounts hadn’t even operated once, one year after the completion of the drive. An analysis on the operating accounts showed a steady increase in balances over one year from their account opening date. The study also highlighted that one of the main reasons behind the non-operative accounts was the lack of financial literacy apart from other reasons such as distance from branches, etc.

The high-powered Nachiket Mor committee on Comprehensive Financial Services for Small Businesses and Low-Income Households, set up by the RBI, that submitted its report on 31st December 2013, found that 60% of the rural and urban population did not have a functional bank account. Thus, opening accounts is just the first step. Too often newly-opened accounts remain dormant. In addition, opening dormant accounts does not lead to financial inclusion. It is the usage of these accounts in terms of deposits and credit that provides impetus to the financial inclusion derives.

OBJECTIVES

Looking at the importance of usage of these accounts in terms of money deposited and credit borrowed, it was thought pertinent to prepare a comprehensive Financial Inclusion Index for all the districts of Kerala and see how they fared when volume of transactions carried through these accounts is also taken into consideration. Since, access to credit is the main focus of financial inclusion, so the study prepares a comprehensive district-wise Financial Inclusion Index of Kerala State by taking volume of credit as well as deposits and evaluates the performance of these districts on that basis.

Objectives of the study are:

- To construct district-wise Financial Inclusion Index for Kerala and measure the financial inclusion level of these districts
- To study the extent of variations among these districts in terms of branches, deposits and credit.

METHODOLOGY

The study covers 14 districts of Kerala. Financial Inclusion Index has been developed for the year 2013. The data for the financial indicators has been collected from Banking Statistics -Basic Statistical Returns published by Reserve Bank of India. In order to standardize the financial variables, the district - wise data for population, area, number of households, workers etc., have been taken from census of India 2001 and 2011. The projections for the year 2013 have been made on the basis of annual growth rate between the two census years. In order to carry a comprehensive study, the following 22 variables representing different facets of inclusive finance have been selected for the study:

Indicators of Branch Penetration:

- Number of branches per lakh of Population (X1)
- Number of branches per 1000 sq. km, of Area (X2)
- Number of branches per Household (X3)

Indicators of Deposit Penetration

- Deposit Accounts per lakh of Population (Number) (X4)
- Deposit Accounts per Branch (Number) (X5)
- Deposit Accounts per Household (Number) (X6)
- Deposits per lakh of Population (Amount) (X7)
- Deposits per Branch (Amount) (X8)
- Deposits per Household (Amount) (X9)
- Deposits per Account (Amount) (X10)

Indicators of Credit Penetration:

- Credit Accounts per lakh of Population (Number) (X11)
- Credit Accounts per Branch (Number) (X12)
- Credit Accounts per Household (Number) (X13)
- Outstanding Credit per lakh of Population (Amount) (X14)
- Outstanding Credit per Branch (Amount) (X15)
- Outstanding Credit per Household (Amount) (X16)
- Outstanding Credit per Account (Amount) (X17)
- Agriculture Credit per Cultivator (Amount) (X18)
- Agriculture Credit per Account (Amount) (X19)
- Non-agriculture Credit per Worker (Amount) (X20)
- Non-agriculture Credit per Account (Amount) (X21)
- Credit-Deposit Ratio (%) (X22)

The FII index has been prepared using distance-from-average method. First, for each indicator, the actual value is divided by the overall average of that indicator,

$$I_q = X_{qs}^t / X_{qs*}^t,$$

where

X_{qs}^t is the value of indicator q for the district s at time t ,

X_{qs*}^t is the mean value of indicator q for all the districts at time t .

$$q = 1, 2, \dots, 22$$

Subsequently, the average of all the indicators gives us the proposed composite index – $FII = (\sum_q I_q)/22$

Average for all the districts is 1 and the districts with value > 1 are above average and fall in the category of financially included districts while district with $FII < 1$ are below average so fall in the category of financially excluded districts.

FINDINGS

Table 2 depicts the FII of 14 districts along with their ranks while Table 3 gives the classification of the number of districts into financially included and financially excluded categories on the basis of Financial Inclusion Index constructed by incorporating 22 indicators as listed above. It is seen from the table that of the 14 districts, only 5 districts are found to be financially included (with index value > 1) on the basis of Financial Inclusion Index which constitute approximately only 36% of the total districts, while 9 districts i.e. 64% are found to be financially excluded. The results clearly show the presence of large-scale intra-state disparities in financial inclusion in Kerala as almost two-third of the districts have been found to be financially excluded. Not only this, the extent of variations is also quite high. The district at the top in terms of financial inclusion is Ernakulam with an index of 1.89 while Malappuram is at the bottom with an index value of just 0.66 which is approximately one third of the district at the top.

Table 4 gives the indicator-wise extent of variations. From the coefficients of variations, it is clear that maximum variations are found in respect of indicators relating to credit penetration. Five indicators relating to credit have coefficient of variation more than 60% namely, Non-Agri. Credit per Non-agri. Worker (COV 83.59%), followed by Out. Credit per lakh of Population (COV 72.29%), Out.Credit per Household (COV 69.54%), Non-Agri. Credit per Account (63.07) and Out.Credit per Account with COV 61.82%. From among the indicators representing deposit penetration, maximum variations are found in respect of Deposits per lakh

Table 2 : District-wise Financial Inclusion Index

District	FII	RANK
Ernakulam	1.891446366	1
Thiruvananthapuram	1.43681954	2
Pathanamthitta	1.211960818	3
Thrissur	1.137664148	4
Kottayam	1.106045006	5
Alappuzha	0.959839999	6
Kollam	0.916409834	7
Kozhikode	0.913447259	8
Kannur	0.841140935	9
Palakkad	0.762448177	10
Kasaragod	0.75776835	11
Idukki	0.715596527	12
Wayanad	0.689599411	13
Malappuram	0.65981363	14

Table 3: Classification of Districts on the basis of FII

Level of Financial Inclusion	Number of Districts
High Inclusion (FII>1)	5
Low Inclusion (FII<1)	9
Total	14

of Population (COV 71.12%) and Deposits per Household (COV 66.50%). In terms of branch penetration, geographical coverage measured in terms of Number of branches per 1000sq. km of area experienced maximum variations with COV of 54.44%. An important point to be noted here is that in terms of number of accounts least variations are found clearly depicting 100% financial inclusion across different districts of Kerala but lots of variations exists among districts when business transacted through these accounts in terms of deposits and credit is considered as large variations exist in terms of these indicators among the districts.

Table 4: Co-efficient of Variations of Selected Indicators

Dimension	Variable	COV (%)
Branch Penetration	No. of branches per lakh of Population X1	35.52
	No. of branches per 1000sq. Km of area X2	54.44
	No. of branches per Household X3	30.74
Deposit Penetration	Deposit Accounts per lakh of population X4	25.69
	Deposit Accounts per branch (No.) X5	10.99
	Deposit Accounts per household (No.) X6	21.24
	Deposits per lakh of Population (Rs. In millions) X7	71.12
	Deposits per Branch (Rs. In millions) X8	40.60
	Deposits per Household (Rs. In millions) X9	66.50
	Deposits per Account (Rs. In millions) X10	47.51
Credit Penetration	Credit Accounts per lakh of Pop. (No.) X11	18.92
	Credit Accounts per Branch (No.) X12	20.10
	Credit Accounts per Household (No.) X13	15.14
	Out. Credit per lakh of Population (Rs. in millions) X14	72.29
	Out. Credit per Branch (Rs. In millions) X15	40.36
	Out. Credit per Household (Rs. In millions) X16	69.54
	Out. Credit per Accounts (Rs. In millions) X17	61.82
	Agri. Credit per Cultivator (Rs. In millions) X18	54.67
	Agri. Credit per Accounts (Rs. In millions) X19	26.10
	Non-Agri. Credit per Non-agri. worker (Rs. In millions) X20	83.59
	Non-Agri. Credit per Account (Rs. In millions) X21	63.07
	Credit -Deposit Ratio X22	33.65

An interesting highlight of the study is depicted by credit-deposit ratio of different districts as given in Table 5. It is seen from the table that except Ernakulam, the district at the top in terms of FII, three of the four financially inclusive districts have a credit-ratio around 65% with Pathanamthitta experiencing the lowest ratio of just 31.71%. The results clearly show that deposit money collected in these developed districts is being mobilized towards other under developed districts for development. However, if we look at the ratio of financially excluded districts, the picture is not very rosy as out of the

Table 5: District-Wise Credit-Deposit Ratio

District	FII	RANK	CREDIT-DEPOSIT RATIO (%)
Ernakulam	1.891446366	1	100.07
Thiruvananthapuram	1.43681954	2	66.40
Pathanamthitta	1.211960818	3	31.71
Thrissur	1.137664148	4	66.61
Kottayam	1.106045006	5	65.19
Alappuzha	0.959839999	6	59.15
Kollam	0.916409834	7	74.22
Kozhikode	0.913447259	8	88.19
Kannur	0.841140935	9	67.06
Palakkad	0.762448177	10	75.87
Kasaragod	0.75776835	11	90.39
Idukki	0.715596527	12	129.32
Wayanad	0.689599411	13	131.58
Malappuram	0.65981363	14	68.91

nine districts, seven districts have credit-deposit ratio below 100%. Thus, major chunk of the deposits is directed towards mainly two districts only namely Wayanad (131.6%) and Idukki (129.3%). This could be one reason leading to presence of glaring disparities in credit penetration among the different districts as explained above with the help of coefficients of variation. The reasons responsible behind these two districts, eating into the major chunk of funds need to be identified and calls for further in-depth study.

CONCLUSION

Based on the findings of this study, it may be concluded that as far as opening of accounts is concerned, Kerala has experienced little inter-district disparities and has successfully accomplished the initial objective of financial inclusion as recognized by GOI which defines financial inclusion in terms of each household having at least one account in the bank. However, the performance of the state in terms of deposit mobilization and credit

disbursement is not very satisfactory as in terms of these indicators, the state is facing lot of variations amongst its districts. Huge disparities exist in terms of access to finance i.e. credit related indicators across the state. No doubt, the state has moved a step forward by achieving 100% financial inclusion in terms of opening the accounts but still a lot needs to be done to motivate the people to use these accounts for depositing money and obtaining credit. Immediate measures are required on the part of the government to recognize the factors that are keeping the people away from operating their accounts productively. Undoubtedly, Kerala is the most literate state but there are many gaping holes in the claims of state reaching 100 percent financial inclusion in India.

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Fading Future of Development Communication

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Abstract

The paper narrates the story of what has been witnessed over half a century while working and researching in development communication for last four decades. In the early 70s, social scientists were engaged in social evaluation of one year (1975-76) world famous experiment and the largest satellite based techno-social initiative for education and development known as Satellite Instructional Television Experiment (SITE) (Agrawal 1981). Briefly this paper aims to describe and discuss what were experiences of development communication over a period of time in India. A synoptic analysis is presented to examine as to what happened to development communication as a concept and practice in national and global perspective. The effort is to bring out the main features and the diversities in the multi-linear evolution of development communication.

Keywords: Development Communication, SITE, Health Communication

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INTRODUCTION

It is important to discuss the term “development” in the context of a large part of Asia and particularly India, which has encountered multiple communication changes within a short span of time. Development as commonly understood and expressed by political leaders, academicians and several UN bodies, is an enabling force for improvement of the socio-economic life of the poor. It helps empower the poor, reduce exploitation,

oppression and unequal treatment by those having economic, social, psychological and political power. It also means an equitable sharing of resources, improved healthcare and education for all. Communication is considered as a support intervention and pre-condition to accelerate the development process and bring transparency in governance for development.

Indian scholars became aware of the concept of development communication in early seventies of last century and endeavours were made to define terms like “development” or “developmental” communication. It must be mentioned in passing that even today these two terms are being used interchangeably and have found place in the literature of development communication. Other terms used are ‘development support communication’ and ‘development for communication’.

Socio-Cultural Perspective of Development

India is one of the world’s oldest and ancient civilisations that evolved, matured and decayed over several millennia and now carving a path of revitalization through democratic political governance aided by digital communication. Historically, an existing divide between rulers and ruled is attributed to British colonial rule in South Asia. It led to creation of small “socially dominant and economically rich” and a large “socially deprived and economically poor” “social class”. As a result, while the rich have had immense access to information and knowledge, the poor remained confined largely to oral tradition. The imposition of secular non-discriminatory British education during the same period led to creation of another layer of information and knowledge gap between them. Therefore, the rich elite continue to dominate the contemporary social and political scene at the cost of the poor who remain oblivious of media and communication use for any improvement in their existing miserable life. A large number of development planners believe that media is a panacea for solving major social ills and problems. Apart from development, the introduction of media and communication in the educational process has seen a step forward towards improving the quality of education and bridging the social and educational gap (Agrawal 1993). However, experience indicates that rich class who could afford access

to media and communication have cornered the benefits of development and education. In this respect, it seems that media and communication has, in no way helped the poor despite research studies of selected development projects contradicting the premise. Even if, there was some change due to media and communication intervention, the same could not be made into a national programme to benefit the poor (Agrawal 2000b:13).

Current Communication Scenario

The closing decade of 20th century was the opening of historic digital media communication interventions for development. It witnessed enormous and unprecedented changes in every aspect of digital media and communication technologies. India has begun abandoning archaic government control over information, digital media and communication that has lately moved from government control to civil society. Finally after 1995 landmark judgement of Supreme Court of India, airwaves and electronic signals were liberated from century's old colonial bondage and control of government.

International and national private players have taken dominant role in redefining, reshaping and providing telecommunication, broadcasting and information services for development. It has initiated an era of partnership of public and private entrepreneurial skills and abilities to bring about connectivity. It seems media and communication has already started reshaping the life of marginalized. In the backdrop of what has been said, a synoptic analysis is presented to examine as to what happened to development communication as a concept and practice in national and global perspective.. The effort is to bring out the main features and the diversities in the multi-linear evolution of development communication.

DEVELOPMENT COMMUNICATION

The first compendium on development communication was published in 2009 entitled *Development Communication: Applied to Journalism and Mass Communication Extension Education and Communication, Rural Development and Management Studies*. In more than one way, this book

represents what was achieved by then in various facets of development over a period of quarter century and brought together development communication experiences from various fields of agriculture extension, home science, health and family planning to mention a few. The publication of development communication compendium attempted to fill the gap of reading material on the subject. Two of the pioneering papers that were included in the compendium was that of Nora C. Quebral (2009a:19-22), Rogers (2009: 239-256), Melkote (2009) and Rogers and Singhal (2009). In the remaining paper a historical analysis of growth and develop of development communication will be attempted with the help of content analysis of journal *Media Asia* which has gone through multitude of changes and in the process got vitiated and lost its original importance, meaning and use. Today, development communication has moved into the arena of "social marketing" in many Asian countries under the tacit pressure of multinational corporations and UN agencies. This is what has been referred to a fading of development communication.

Historically, *Media Asia* first published an article on "development communication" by Nora Quebral in 1973 (Quebral 1973 and 1975). Later Nora Quebral (2009b) elaborated the concept of development communication. According to Quebral, "Development communication uses the communication media to help bring about socio-economic....change in ways that are compatible with its humanistic goals. ... Development Communication is circular and not a linear process and ...It accepts that there is no one model of development" (Quebral 2009:21-22). Further, development communication, shared the prescriptive and empirical characteristics of the parent discipline of agricultural extension and general objective of development (Nora Quebral:1973). Development communication is a field capable of absorbing and synthesizing varied talents.

Earlier Everett Rogers (1962 and 2003) and Wilbur Schramm (1964) and many others mooted the idea of 'national development' and 'diffusion of innovations for agriculture development' especially in the United States of America (USA). Their strong argument and assumption was that

“communication is a crucial element in the process of development of Third world society” (Schramm 1964 as quoted by Goonasekhera 2009: 4). In this assumption there was no place for the existing structural inequalities and impediments that would act as barrier for any development, apart from information barriers arising out of multilingual societies of Asia having built-in social hierarchy, structural inequalities and religious heterogeneity.

An insightful critique of development communication was brought out by Narula and Pearce (1986). Narula and Pearce (1986:5) suggested a new “communication perspective” which included “all of the actions taken by the government legislation, public works and the development bureaucracy itself as well as the IEC programme ... as powerful forms of communication”. Hence, Narula and Pearce (1986) recommended that the concept of development communication must recognize the relationships between government and civil society .

In democratic India, in its broadest sense development communication is a post Second World War phenomenon. Hence, its progress and growth must be seen in response to several converging needs of development like Agriculture, AIDS Control, Drinking Water, Health Care and Adult Literacy. Within multiple divergent theoretical and methodological frame development communication began to be practiced for improving socio-economic life of poor and weak. The canvas of development communication today includes non-conventional energy, environment consumer education, political and democratic participation (Agrawal 2009:45). In doing so, development communication assumes that “human behaviour” has a built in plasticity which can be molded, modified and changed through media intervention by persuasion and by creating conducive conditions. In spite of several vigorous and sustained communication interventions in large part of India, limited success has been achieved. One wondered whether development goals can be achieved in a multi-religious, multi-lingual and socially stratified India having built on structural inequalities of access to various kind of resources and power?

Similar observations have been made in the context of Africa and Asia-

Pacific countries during 1997-99. Obijiofor, Inayatullah and Stevenson suggest ‘...that there [ICT] are serious barriers to their use in educational and socioeconomic development, such as issues of infrastructure support, access to the ICTs, training and skills development, and hierarchical social relations which determine who has access to ICTs’. In the recent past within India, one has experienced a great deal of “social marketing” approach in place of development communication. However, the Indian university departments and selected educational institutions continue to teach and research development communication though to a lesser extent. Also, scene of development communication has largely shifted from traditional forms of communication including broadcasting to Internet and social media within social-marketing framework.

Academic Spur of Development Communication

In 1976, after the completion of Satellite Instructional Television Experiment (SITE) at Ahmedabad a group of scientists, engineers, creative and communication researchers proposed to carry forward the practice of development communication in India. The vision was to push rural development and to boost and accelerate the process of development in which communication would play a critical role. Hence, it was thought essential first to train a cadre of development communication professionals. It was felt that they would be trained and be committed towards rural development. This gave birth to a teaching programme and setting up of “Centre for Development Communication” at Gujarat University, Ahmedabad in 1982. The first batch of students were offered a Diploma. The medium of instruction of teaching was largely English. The 18 months Diploma course attracted bright and young fresh graduate men and women. The programme was a great success and very soon, it was decided to raise the level of Diploma to Masters Degree. Hence, Master of Development Communication (MDC) was born that continues even today though with low visibility and priority as a section under the Department of Mass Communication. Since then several hundred students have passed out and were placed in variety

of media/communication organizations. The sad part is that very few students after graduating from MDC actually worked in development communication whereas large majority moved or got absorbed in entertainment media industry. At the turn of the century, the MDC degree lost its sheen and finally has to be integrated with the conventional courses in the Department of Journalism and Mass Communication at Gujarat University. At the same time, a number of departments of Home Science and Extension Education have introduced agricultural communication, development communication and extension in the courses. Similarly in US especially East-West Communication Institute, Honolulu shifted its focus of development communication to other areas and finally East-West Communication Institute was closed down.

Development Communication and Extension

Extension Education as an academic discipline in its many incarnations has the credit to highlight the role of communication in development. In India, departments of agriculture, home science, animal husbandry, fisheries, horticulture, and poultry teach and carry out research in development communication. Due to direct USA assistance to help increase production in India and other Afro-Asian countries, experts visited India and shared their first hand experiences and began to advice and implement a large number of development programmes for meeting the food requirements of the country. The American experts thought there were three missing links in achieving the goal of development. These included appropriate technical information, various agricultural inputs and persuasion if appropriately followed that would increase the agricultural productivity of land and improve the quality of life. In turn, it was thought to help improve the economic condition of the farmers and all those who had depended on agriculture and allied occupations.

“Communication model” for agriculture development was directly borrowed from Mid-Western Sociological Society adoption diffusion model developed by mid western “Rural Sociologists” in USA and later championed

by Everett Rogers (1962 and 2003 5th edition). In the span of half a century, India is yet to have a major publication on development in India without direct or indirect reference of Everett Rogers (1962) and his other publications. However, at the turn of the century, agriculture communication for development began to shift its focus and now moved into M-service for agriculture development as reported in Bangladesh (Islam, 2011) and also in some parts of India especially Tamil Nadu. Similar references can be found in plenty in the Indian Journal of Extension Education founded and published by an Alumni of University of Wisconsin, US and under publication since 1965. Similar publication could be found elsewhere in the country.

Health and Family Planning Communication

Information, Education and Communication (IEC) approach in health and family planning represents and remained the corner stone of development communication as understood and discussed by several communication scholars in Asian countries. In addition, to a large number of publications in India on Health Communication, *Media Asia* has carried several articles on health IEC from time to time which started as early as in 1974 (Bautista, 1974). *Media Asia* continued such publications until the end of 20th century. However, at the turn of the century, the interest in health communication was hovering around web-based telecommunication health system (Lim Chia Ng and Omar Ismail, 2005).

In India, HIV/AIDS has taken a center stage in the development of health communication since 1986. Several research studies since then in several aspects of HIV/AIDS have been carried out. Also, another focus area has been National Family Health Surveys (NFHS). Malaria, healthcare, health insurance for poor occupied a great deal of health communication researchers. Some of the important health communication research sponsored by the Department for International Development (DFID), U.K. during 1997-99, ‘Compliance Study of Malaria Control and Research Project (MCRP), Surat District, Gujarat’. It involved a series of studies dealing primarily with compliance behavior of rural folks related to malaria prevention.

A large number of media products including posters were developed in project to reach out rural population and were tested in the field before use. It would be difficult to give any definitive conclusion that emerged from the study leading to prevention of malaria in target areas.

Similarly, communication aspects were studied in detail under Reproductive and Child Health project (RCH). The first and second phases of RCH survey were completed in 1998-99 and 1999-2000 respectively. The two-year study covered all 38 districts of the three states namely Assam, Meghalaya and Nagaland. These surveys provided several demographic and socio-economic estimates and media and communication behavior of men and women to the policy makers and programme managers for implementing and strengthening the ongoing RCH programme at district level. The salient point to mention is that lack of information was not major predicament or barrier of any healthcare programme. It was other structural factors that negatively affected the adoption of healthcare programmes. To a large extent, same can be said about HIV/AIDS related communication approach and outcome.

It seems health concerns and communication strategies for health have shifted. The new effort is increased use of communication technology for health which is continuing along with added focus in HIV/AIDS and sexual health. Similar shift has been observed in conventional family planning communication, though the term development communication is not explicitly recognized in context of health communication.

Community Radio and Development

At the turn of the 21st century, articles on community radio has frequently appeared in India and in academic circles especially in *Media Asia* along with several edited books on community radio. These articles have been part of research projects supported and carried out by media and communication researchers to assess the possible impact of community radio to accelerate development and empower women. The Indian government has been loudly proclaiming the setting up of 4000 community radio stations

for several years but performance and use has been dismal so far. However, community radio in India in its brief history has come a long way without any major contribution in development of poor and other members of civil society (VOICES-UNDP).

Current Development Communication: An Indian Perspective

The rise of development communication seems to have declined at the turn of the century as a concept and practice, which was yet to be fully internalized and accepted by the Indian scholars beyond non-government organizations and in few university departments. Eapen's (1988:67) diagnosis and analysis was that the concept of development communication had opened up a Pandora's box related to the inherent conflicts and contradictions between the stated policy of the state regarding electronic media and actual use for development. Development communication as it stands today is interdisciplinary in approach and content in which almost all disciplines of social sciences have contributed but has anything to do with development and change. As the interest of other disciplines has enlarged the scope of development, the old concept of development communication in India has started dying as an old paradigm.

The privatization of communication, rapid changes in communication technologies and increasing influence of social marketing model for development has already undermined the role of development communication. The other model of development communication emerged from China, which is not fully understood in a democratic country like India. Publications on China's development communication seemed to have somewhat different meaning, focus and slant that are yet to be fully understood. Earlier, communication scholars had raised a question: how transferable could be development communication experiences of China in other Asian countries including India. It has been reported that in China development depended on interpersonal communication then through intervention of electronic media (Chu 1987). Several papers in *Media Asia* have covered a variety of development communication articles on China, Japan, Indonesia, Philippines,

Pakistan and Bangladesh without giving any universal or Asian prospective which could meaningfully be applied in India.

Further, analysis of *Media Asia* publications at the turn of the century showed that development communication started losing its importance under the pressure of market economy, international financial institutions like Asian Development Bank and World Bank and international donor agencies, and other UN agencies. K.E. Eapen (1988) thought development communication was “Country Cousin Syndrome of Development”. The brief story certainly provides a declining trend of development communication at least in India. Now, one is tempted to say that colleagues of the Euro-American countries might re-coin a new label or concept or title to sell development communication in the globalized market economy.

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FOOTNOTE

- 1 Some of the ideas have been drawn from the paper entitled “Rise and Fall of Development Communication: The Asian Scene” presented during 22nd AMIC annual conference held on 4-7 July 2013 and a paper entitled “Information Communication Technology and Development in India: Perceived Promises and Performances by People” (2014). In addition some of these thoughts were presented on the occasion of Golden Jubilee Celebration Conclave, in Department of Development Communication and Extension, Lady Irwin College, University of Delhi, Delhi, India, March 13-14, 2015.
- 2 Part of this section of the paper has been drawn, revised and enlarged from Agrawal:2000a
- 4 Part of this section of the paper has been drawn, revised and enlarged from Agrawal:2000a
- 5 The author has attempted to analyze published articles on Development Communication of *Media Asia* as a part of this presentation. *Media Asia* is

one of the leading communication *journals* of Asia. I have reviewed *Media Asia* for a period of forty years between 1973 to 2013 for this purpose.

- 6 http://en.wikipedia.org/wiki/Development_communication
- 7 See “Rise and Fall of Development Communication: The Asian Scene”. It was presented during 22nd AMIC annual conference held on 4-7 July 2013.
- 8 <http://www.metafuture.org/Articles/icts.htm> access on February 26, 2015.
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The Role of New Media in Political Participation: A Survey of Politicians of Karnataka

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Abstract

Political leaders, government leaders and political parties are getting closer to the masses with new media and social media platforms turning into mass media. However, the usage of digital platforms by politicians is not uniform. The study is an exploration of the usage of new media by politicians of Karnataka. The intention is to study how politicians of Karnataka are getting conversant in the usage of new media for their personal communication, daily work and for public good. In other words, the research focuses on new media consumption and usage by politicians, who are the respondents in the study. Karnataka is one among very few states in India which is leading in e-governance. The state is progressive in using technology and developing software for use of public utility. In terms of the impact of new media on the respondents, it was found that there was considerable impact in terms of usage of devices that helps in accessing new media and also awareness regarding popular social media networking sites. However, the usage as well as awareness is not very extensive and also the purpose for which they were used is limited. And the usage was found to be independent of their age, education and nature of membership of the democratic institutions.

Keywords: Politicians, Participation, New Media, Public Sphere,

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INTRODUCTION

New media and social media are being increasingly used in political campaigns with youngsters constituting a majority of the voting population in India. Politicians are trying to get a footing in the cyber world to reach and engage with the voters. Slowly but steadily, traditional media is facing stiff competition from new media. Political activism is slowly shifting from conventional media to social media. Political leaders, government leaders and political parties are getting closer to the masses with new media and social media platforms turning into mass media. However, the usage of digital platforms by politicians is not uniform. Those who are active in politics are also found to be active online. Political engagement with technology interface is going to increase. The impact of usage of digital forums has set the trend for personalisation of politics. Comparisons between politicians who use social media and those who do not have online presence inevitable in this e-world.

Political communication, which is a sub-field of communication, has dramatically changed in the last decade. New media platforms and social media tools have made democracy more vibrant, at least in the cyber world. This does not imply that the quality of governance has improved and society is happier because the quality of life has improved. But with the media becoming more and more interactive, public communication has increased which in turn has an impact on policy makers. Many traditional media as well as new media have changed politics, which is inclusive of governance and players involved in it. Maybe this is seen in patches.

During the Arab Spring, Facebook played a significant role in generating the 2011 Egyptian revolution. The protestors could get connected on Facebook. Facebook played the role of a catalyst in the American political process in January 2008. It became a forum for political debates. The group users engaged in debates and expressed their mind through voting. The Facebook application 'US politics on Facebook' was installed on the users' account to express comments.

There are many more such examples to show how Facebook groups

worked as pressure groups to effect revolution, governance and policies. Social media usage has become a part of regular administration for certain politicians including former US President Barrack Obama and Indian Prime Minister Narendra Modi.

The study is an exploration of the usage of new media by politicians of Karnataka. The intention is to study how politicians of Karnataka are getting conversant in the usage of new media for their personal communication, daily work and for public good. New media is gaining significance in terms of usage. Technological innovations are also making communication become easier, sophisticated, personalized as well as function as mass media. Politicians, being in public life, have to communicate extensively. In the 21st century it is difficult to find a politician who has no presence in digital world and who does not use a smart device. Using digital device for oral, written and visual communication is increasing among politicians. The consumption and usage is not uniform.

In other words, the research focuses on new media consumption and usage by politicians, who are the respondents in the study. It examines whether politicians use new media randomly or adopt any strategic method or whether it is a combination of both purposes for which new media is being used. Evaluation research has been done to assess the effectiveness of new media practices by the politicians.

New Media and Politicians in Karnataka

The primary objective of the present study requires studying, understanding, enquiring, observing and analyzing new media, its usage by elected representatives and seasoned politicians of the state of Karnataka. Karnataka government, Karnataka legislature secretariat, Indian government and Parliament secretariat have been slowly but steadily adopting e-governance for improving administration; take governance closer to people and more so to bring in transparency by cutting down scope for delay, red tape and corruption, in governance. Karnataka is one among very few states in India which is leading in e-governance. The state is progressive in using

technology and developing software for use of public utility. The state legislature secretariat generates a lot of data and information, mainly because of Question Hour in the legislature. A lot of documents and reports are placed on the floor of the Houses. The secretariat as on November 2015 was in the process of putting up a system to digitize all the written papers and documents it generates during the legislature session. While making use of provision for computer-based documentation and sharing of the same, the secretariat has also made efforts to equip legislators to adopt to e-governance and for use of public work. It has a website which offers basic information regarding the Upper and Lower Houses. It uploads information bulletins during the legislature sessions. The secretariat is planning to invite questions from the legislators online and also upload the answers by ministers/ government on its website. Any individual would be able to access the information on the website.

There are certain facilities given to the legislators and one such is reimbursement of phone bills by the secretariat. However the government foots the bill when it comes to the ministers and of those who hold positions in the government. BBMP is not reimbursing phone bills of the Corporators except that of the mayor. The civic body has 12 standing committees and each is headed by a chairperson who is a Corporator. The chairperson has an office in the head office of BBMP. The office is provided with land phone facility.

The Karnataka state legislature secretariat and the government has gifted computers, laptops and iPads to its members over the years. The secretariat had distributed free laptops to nearly 300 legislators during the *Suvarna Karnataka* celebrations, in 2007. The gesture was to mark the celebration of the golden jubilee celebrations of the State's reorganization. As per the information provided by the legislature secretariat, Acer India Limited's laptops were given to the members. The cost was Rs 55,000 for each device. The specification of the laptop – Intel core i3 processor, 2300, 1 GB memory, 60 GB hard disk, DVD combo drive, 15.4 inch colour monitor. In all, a sum of Rs 1, 65, 00,000.42 was spent for the purchase of the laptops

to 300 legislators. Some of the politicians, who were members of the legislature in 2006-07 (the 12th legislative assembly), were members of the 13th legislative assembly too. Hence, they have said they have a government given laptop. As many as 33 legislators who had received the laptop from the secretariat are part of the respondents for the study. In case of the MPs, some of them have purchased laptops from the money sanctioned by the Lok Sabha secretariat. Every legislator was given a free iPad by the secretariat in December 2011. Of them, 67 legislators are part of the respondents for the study. Some of the legislators were not happy even with this hi-tech device because they wanted a higher version. Some even had preferred iPhone over iPad. Of course, the secretariat did not respond to the demand.

The Karnataka State Legislature Secretariat from 2013 onwards (for the 14 legislative assembly) has made provision for sanctioning a sum of Rs 60,000 per legislator towards purchase of a desktop computer. The secretariat reimburses the cost on production of the receipts. Once the legislators demit office, they have to return it to the secretariat. The rule is there only to be broken. The usual practice, according to officials, is that politicians keep the computer system by paying some nominal amount to the secretariat. There is no training session held for legislators to learn the usage of computer. As many as 16 respondents who had received computer or desktop form the part of the respondents.

During the 13th Legislative Assembly (2008-2013) neither desktop computers were given to the members nor was there a provision for sanctioning money to it. Bengaluru Corporators are not given computers (it was till November, 2015). However, for the Members of Parliament, the Lok Sabha secretariat had sanctioned money. It had allowed them to purchase any device – desktop computer, laptop, or mobile phone – for their use. And, every MP was found having a desktop for official work. As many as 13 MPs have received computer from the secretariat or the Central government as the case may be, are part of the respondents for the study.

There is an exclusive department in Karnataka for providing technical

advice, investment and logistical support for government leaders to adopt e-governance solutions and applications. The Centre for e-Governance (CeG) leads the e-transformation initiative of Karnataka government. It is a society functioning under the Department of Personnel and Administrative Reforms. It is basically guiding governance reforms. This nodal agency was established in 2006 to steer the e-governance policies and strategies in the state. The state has state-of-the-art two Data Centres, Multiprotocol Label Switching (MPLS) technology-based Karnataka State Wide Area Network, the Secretariat Local Area Network and core applications such as e-procurement and Human Resource Management System (HRMS) which are used by many government departments, according to the official website.

The Directorate of Electronic Delivery of Citizen Services (ECDS) looks after the *Nemmadi*, BangaloreOne and KarnatakaOne citizen service centres where ICT are used for citizen-centric services offered by both government and private. It launched MobileOne App, in December 2014, which has integrated various services into it. The App is a multi-channel mobile services platform. It is a unified mobile platform for delivery of G2C and G2B services of the government along with citizen-centric private service which are available 24/7 from anywhere. Some of these initiatives of CeG have brought laurels including National *Webratna* 09 Award for Excellence, department of Information Technology, Government of India for BangaloreOne and HRMS and CSI-Nihilent e-Governance Award, Computer Society of India of e-Procurement.

Various government departments are using the e-route to monitor files movement and give updates on applications it receives from public seeking various services. For example, the Department of Food and Civil Supplies receives application for Public Distribution System (PDS) under which subsidised and free ration are issued. Another initiative is the Sakal online service which covers nearly 450 services of 11 select departments. Users can check the status of the services which they are seeking. The department of agriculture's '*Krishi Maaratha Vahini*' website offers information on agriculture in both English and Kannada. Commodity prices are updated on

a daily basis. The registered users get updates as text messages on mobile phone.

The state government's official website '*sachivalayavahini*' has four categories under which government orders are uploaded and file movement of various departments are provided with date. The information is available both in English and Kannada.

The revenue department, under '*Bhoomi*' initiative has digitized land records though it is not foolproof. The software developed and used from 2001, has won a UN public service award. Another unique software of the department, '*Kaveri*', facilitates e-registration of immovable properties. Websites of some departments have public utility while some are there for namesake.

The Central government too has taken several major steps to adopt e-governance in public administration. Some services are rural specific with municipal governance adopting e-initiatives, while some are urban centric. E-Kissan Foundation, a non-government organization, has distributed free tablets to farmers in Bagalkot and Vijayapura districts. It offers information on fertilizers, pesticides, seeds, crop patterns and many information including weather updates on real-time basis. In addition, the platform is integrated with other e-governance platforms.

Bruhat Bengaluru Mahanagara Palike (BBMP), which takes care of Bengaluru city administration, has built an informative website which offers useful information to the public. The civic body in the recent years has given option for immovable property owners to pay tax online. Issuing and renewal of trade licences has gone online. In March 2012, it launched the Property Identification Number (PID) system under which each immovable property has been identified and given number. The number has to be quoted while paying the property tax. Applications for getting Khata services, tenders details, birth and death certificates, a handbook on Right to Information Act (RTI), RTE applications, alerts on vacancies, health alerts like Dengue and Chikungunya, phone numbers and address of offices where tax payment are accepted and details of welfare programmes are available. By and large,

the government websites are not interactive.

These initiatives show that successive governments have been spending money on equipping government offices, functionaries and legislators, members of Parliament and Corporators of BBMP to adopt and use electronic devices and the Internet. Efforts by the government and private sector establish that the scope of e-governance is going to expand. At the same time there are efforts by the government, legislators and MPs to equip themselves with the changing trend in communication and governance.

REVIEW OF LITERATURE

New media is just about decades old. There are not many studies and investigations done to explore the use of new media by politicians in Karnataka.

Usage of new media by politicians during elections has yielded sufficient study material for academicians, researchers and research institutions. A lot of research has been done to study the usage of new media in the US presidential elections. However, not much research has been done when it comes to the usage of new media by Indian politicians and this became obvious when the review of relevant literature was taken for the present study. The study done in the last little-more-than-a-decade has been reviewed here, according to which both developed and developing countries are eager to employ new media for political communication and engagement. The usage of information and communication tools is different in developed countries. A study (Ron Davies, 2014) on the effectiveness of social media in election campaigning highlights how since the 1980s, democracy across the European Union (EU) was characterised by the increasing disengagement of citizens, particular younger ones. The study says that the usage of social media form of communication among politicians and citizens may provide a way of increasing citizen involvement in political life, especially during election campaigns.

The author sums up saying that the influence of social media use in elections may be different in countries with populations of different size and

with different political and electoral systems. Nevertheless, even motivating a small percentage of the population can (at least in some electoral systems) make a considerable difference to the result of a party or an individual candidate. Certainly an upward trend in citizen participation in European elections due to any media, social or not, would be taken by many as a good sign.

New media technologies have their own impact on political communication and this has been delineated in the study (Saqib Riaz, 2014). The author elaborates on how the extensive usage of the Internet and mobile phone has its own impact on election campaign in developed and developing countries. New media technologies can “flourish” only in societies where democracy is promoted and participatory. However, in undemocratic countries, media is “controlled” and used for propaganda against the enemies and for publicity of those in power and their policies. “In such countries, digital media cannot play its role in spreading democratic values in society,” the study says.

The author points out that in many developing countries political freedom does not exist. That the Internet connection is limited in developing countries and hence in such situations digital media cannot play an effective role is the argument of the author. However, the author does not stop at this. He says new media technology has “greatly influenced” political communication in the whole world. However, its efforts are more evident in the developed parts of the world where this technology is easily available. Technology has influenced the process of political communication in developing countries and such countries are focusing more on spreading modern technologies like the Internet and mobile phones. The usage has also found to have impact on political attitudes and behaviour in the countries where it is used frequently. The developing countries can adopt similar methods to bring a positive change in the political attitude and behaviours of their public.

While discussing about the increase in the networked population from the early 1990s and for mass movement, the study on the impact of social media on politics (Surjit Kaur and Manpreet Kautm, 2013), discusses how

social media was used in India for movement against corruption and to raise voice against the Delhi rape incident and the Telangana movement among others. The advent of social media has enabled an “unprecedented” empowerment and engagement of the common man for expressing political opinions. One positive development the authors see is the youth talking about political issues mainly because of the emergence of social media. Earlier, political discussions were confined only to those who used to read newspaper and watch television news channels or participate in discussions. However, social media networking has made the youth of India “sit up and discuss political issues.”

The usage of online media for political communication in advanced countries may not be a tough challenge but the situation will be different in underdeveloped countries. The research on the impact of social media on political mobilization in East and West Africa (Yusuf Kalyango Jr and Benjamin Adu-Kumi, 2012) examines whether the online and wireless digital media have aided political mobilization in Africa more than the traditional media in the past five years. The digital media, such as cellular phone, have penetrated areas in many African countries that are inaccessible to traditional media.

Explaining how the new technology has helped the common man to get better-connected with even politicians and people of all classes in the digital space, the researchers say people use it to connect with distant others including leaders and policy makers who are otherwise not easily reachable by any other means. The respondents had overwhelmingly said that social media platforms provide an enabling environment for low cadres to network with middle class and very wealthy netizens through mutual social networks to collectively discuss familiar communal obstacles, shared opportunities, mutual social events, and shared ideological politics, the study contends.

There has been sufficient interest shown by academicians and researchers to assess the impact of new media on the US presidential elections. In one such study (Aronson Elise D, 2012), the research addresses

the impact new media tools have on different segments of the electoral process in the US. Aronson Elise says that this trend was demonstrated throughout the 2008 presidential campaign of Barack Obama. He used new media in ways not used before and to an extent not previously done to win the highest office by effectively integrating new media usage into his campaign strategy. "As far as election results go, while new media may not be the one resource that will mean if a candidate wins or loses, it is very likely that it could make a difference at the margins. This is especially the case in an extremely close election," his study finds.

To understand the credibility point of view of online media, the study conducted on exploring online news credibility (Chung Joo Chung, Yoonjae Nam and Michael A Stefanone, 2012), helps. While investigating a range of traditional and technological factors that contribute to the credibility perceptions for three categories of online news, the authors say that mere online presence does not add much credibility if online sites do not employ hyperlinks to extend access to related topics. The researchers endorse that credibility is a "very complex issue", and that multimediality and interactivity do not influence credibility perceptions.

Coming to political news and media, there is a general notion that media gives too much coverage to politics. This may not be demand-driven. This argument gets support from a study of Pew Research Centre conducted in 2012. The study had concluded that all content receivers are not equally interested in politics, and also, usually all prominent political parties in the US were by and large making similar efforts to use social media platforms.

Like the Pew research, there is one more in-depth study on social media usage and democratic participation. A report by University of Technology, Sydney, accessed by Australian Electoral Commission (AEC) elaborately explains different dimensions and partners in e-democratic initiatives and learnings at different levels. The study report (Jim Macnamara, Phyllis Sakinofsky and Jenni Beattie, 2012) aims at examining approaches to social media by government agencies and the election management bodies (EMBs) in order to inform the Australian Election Commission in social media.

The three authors, in their 95 pages report, say that a number of EMBs and other government departments and agencies, as well as political parties and politicians in Australia and internationally, have demonstrated that "social media afford new opportunities for engaging citizens in democratic processes."

A study on twin social media outlets Facebook and Twitter (Annie Hellweg, 2011) observed that these sites have impact on the constituents. Social media's role continues to evolve within the political realm, and there are definitive relationships to be explored between a politician's use of their sites and the opinion of public. Facebook and Twitter have enabled people to "access public figures at an unprecedented level; campaigns can no longer rely on traditional media to reach constituents without the risk of overlooking a new population of voters," the researcher explains.

Hellweg sums up by saying whatever may be the tools used by politicians to engage people in political process, still people want politicians to be what they should be. In the midst of Facebook and Twitter's revolutionary impact over political campaigns and elected officials, it should be noted that, like everything, there is a limit. Ultimately, constituents still want their politicians to be politicians; while snippets into their personal lives are beneficial, this cannot take precedent over career-driven content. When it does, politicians lose credibility and trust with their voters.

OBJECTIVES

The types of media consumption, prominence given by the politicians for the types of media, their reasoning for the usage, the opinion on media, the exposure of their nearest family members to new media and electronic devices, the purposes for which new media is put to use, the reasons for using or for not using new media, the devices used by them for using the web based and the Internet based platforms and their opinion on e-governance are studied. The research is to study the media behaviour of the law makers.

- To study the access and usage of new media by politicians of Karnataka in public interest.
- To study the level of awareness of Karnataka politicians about new media.
- To analyse the usage of the new media platforms by politicians across Karnataka.
- To study the impact of new media tools on the performance of politicians.
- To analyze the involvement of elected representatives in making best use of electronic devices given by government for public cause.
- To examine the role of new media as an interface between politicians and people for consultation on public issues.

METHODOLOGY

The study focuses on the usage of new media by politicians of Karnataka for their personal and public utility. It focuses mainly on new media which is inclusive of social media platforms. There is no foolproof method to study new media though a lot of experiments have been done. The studying such subject is a challenge. The survey as well as qualitative analysis methods were adopted for studying new media.

Sampling

The Karnataka State Legislature has a total of 225 members and the Legislative Council has 75 members. There are 28 Lok Sabha members from Karnataka. The Bruhat Bengaluru Mahanagara Palike has 198 elected Corporators. The sample size consists of politicians representing various elected bodies and a section of the seasoned politicians which included former elected representatives, former ministers and party presidents. In all, the total respondents were 125 from across Karnataka. The sampling technique adopted was stratified and simple random selection of the MLAs, MLCs and MPs. Conscious efforts were made to give representation to every district. For the benefit of the readers, the representation of politicians across

geographical area is provided in the table below. The sample consists of 39 Members of the Legislative Assembly, and representation has been given to all the 30 districts while selecting the respondents. Similarly, 10 Members of Lok Sabha represent an equal number of constituencies of different districts. As many as 26 Members of the Legislative Council and 25 Corporators were selected. In case of selection of the Corporators, the random sampling technique was adopted. This is so because the Corporators belong to the state capital, Bengaluru, which has the distinction of being billed as Silicon Valley of India. The city has also gained reputation as Technical Capital with a large number of IT/BT companies coming up and thus putting up Bengaluru on the world tech and business map. The Karnataka government's efforts to deliver services to people through e-mode are launched here. Hence, it was decided to see how far the Corporators, who represent the people of this city, are employing new media for their work. The idea was to check whether a cross-section of the Corporators is keeping in tune with developments taking place in social media, which has turned into mass media.

Sample Profile

MLAs	39
MLCs	26
MPs	10
Corporators	25
Seasoned Politicians	25
Total	125

Among the respondents for the present study, conscious efforts are made to include politicians of all political parties. While doing so, the numerical strength of the parties in the legislative assembly was kept in view.

Among the respondents, the Bharatiya Janata Party politicians topped the table in terms of numbers representing 43.2% of the total respondents, the members of Indian National Congress or Congress party– 35.2%, the Janata Dal (Secular) - 12% and Independents – 3.2% and the rest of the

The respondents and political parties

Political Parties	f	%
BJP	54	43.2
INC	44	35.2
JD-S	15	12
KJP	1	0.8
BSR Congress	1	0.8
BSP	1	0.8
CPI	1	0.8
CPI (M)	1	0.8
JD (U)	1	0.8
Any other – Karnataka Rajya Raitha Sangha	1	0.8
Independent	4	3.2
Do not belong to any party	1	0.8
Total	125	100

N=125

parties including regional and a handful of national parties – 0.8% each. The study period for the research was 2011 to 2014. However, the members of the 13th legislative assembly of Karnataka and 15th Lok Sabha were taken into consideration for the study. The 13th assembly lasted from 2008 and 2013, while the 15th Lok Sabha was from 2009-2014.

The structured questionnaire is the tool which was printed and circulated to capture information which is both quantitative and qualitative. The informal interview schedules were drawn. The respondents were requested to fill in the questionnaire and give feedback. The study approach is popular and commonly employed in the field of social sciences including in mass communication and journalism.

The structured questionnaire had a total of 70 questions classified under four sections:

- i) Socio Demographic and Economic Profile
- ii) Political Party Affiliations
- iii) Media Habits and
- iv) New Media.

The interviews and interactions helped in getting quantitative and qualitative inputs for analysing the subject on a broader canvas. The focus is also on the qualitative changes the tools are bringing about rather than gathering a huge database. For this purpose, an in-depth study of the web-based tools used by a section of the politicians and political parties is carried out. A majority of the respondents were available for informal interviews and discussions in Bengaluru while they were attending the legislature session and the Bruhat Bengaluru Mahanagara Palike council meetings that took place during the study period. This approach of data collection helps in meeting the respondents in a professional working atmosphere. It also helps in doing quality work in short span cost-effectively. Some of the respondents had to be met in their home towns as they were not members of any elected body. The pre-tested questionnaire schedules were given personally to the respondents to collect the primary data.

Hypothesis

H₁: The usage of types of *New Media* is dependent on the *Education Level* of the respondents.

H₂: The usage of types of *Social Media* is dependent on the *Education Level* of the respondents.

H₃: The usage of types of *New Media* is dependent on the *Age Group* of the respondents.

H₄: The usage of types of *Social Media* is dependent on the *Age Group* of the respondents

H₅: The usage of types of *New Media* is dependent on the nature of *membership* of the respondent *politicians on the democratic institutions*.

H₆: The usage of types of *Social Media* is dependent on the nature of *Membership* of respondent politicians of the democratic institutions. (i.e., between the Corporators and the MLCs, MLAs & MLCs, the MLAs & the MPs and so on).

H₇: There is no significance in the number of **SMSs** (text messages) sent across the nature of **membership** of respondent politicians on the democratic institutions.

H₈: There is no significance in **Average number of calls made per day** across the types of **membership** of the politicians of the democratic institutions.

H₉: There is a significant correlation (relationship) between the **Duration of using the Internet** and **Downloading information from the Internet** across the nature of membership of the politicians of democratic institutions.

DATA ANALYSIS AND DISCUSSION

The emergence of new media is changing the whole gamut of communication and it has become people's media. It has been used by various strata of society including the political class. Indian elections have been witnessing increased usage of new media.

The present study focuses on the usage of new media by politicians of Karnataka for their personal and public work.

Sociodemographic and Economic Profile

- Among the respondents, a majority (91.2%) was male and the rest (8.8%) were female. It is clearly established that women have a long way to go in getting representation in politics. The tradition of male dominance in politics in all political parties is continuing. However, unlike the Karnataka Legislative Assembly and Indian Parliament, there is a legal provision for reserving seats for women in Bruhat Bengaluru Mahanagara Palike, the civic body. Such a provision is not there in the legislative bodies of Karnataka.
- A majority of the politicians (31.2%) in the State were middle aged (44–55 years). It is generally believed that in India, it takes not less than 40 to 45 years to settle down in politics and even middle-aged persons are considered young in politics (Only 4.8% of the respondents fell in the age group of 25–35 years and 17.6% in the age group 36–45).

- A majority of the respondents (56.8%) were graduates/degree-holders followed by post-graduates (20.8%) which cumulatively accounts for more than three-fourth of the total respondents for the study. Only a small proportion (13%) of the respondents had completed SSLC (10th standard) and hardly (2%) were school dropouts. It indicates that more academically oriented people are entering into politics.
- The respondent politicians belonging to the general category were more (60.8%). And the next highest (24.8%) constituted the Other Backward Classes (OBCs). Those who are socially and educationally stronger are more in politics.
- When it comes to occupation, a majority (40.8%) of the respondent politicians were in both politics and agriculture, while the second highest (34.4%) were both in politics and business. The data showed that the financially well off were playing a major role in politics. Businessmen and those in the agriculture business had a major say in politics. Only a meagre (8.8%) had only one profession – politics. A smaller percentage (5%) joined politics from professions like legal, academics, engineering and medical among others, it was found.
- A majority of the respondents (47.2%) had a monthly income of more than Rs 3,00,000, followed by those who had income in the range of Rs 76, 00,000 – Rs 1, 50,000 (24%). No legislator or MP's monthly salary could be less than Rs 1.4 lakh a month in Karnataka. Legislators (MLA and MLC) are entitled to a fixed monthly salary of Rs 25,000. And, with various allowances, their total salary is not less than Rs 1.4 lakh a month. In addition, the sitting charges and travel allowance to attend official meetings, a foreign trip once in their five-year term or two tours within India are allowed. Members of Parliament (Lok Sabha and Rajya Sabha members) get a salary of Rs 50,000 a month and with various allowances it touches Rs 1.4 lakh. A Bengaluru Corporator gets around Rs 8,000 honorarium a month, while a Mayor gets about Rs 20,000. Medical bills are reimbursed by government for all types of members of democratic institutions.

New Media and Politicians

Computer

- Nearly 95% of the total respondent politicians were found to be using computer.
- Among the users of computer, 96% of them were graduates and 100% were post-graduates. About 89% were those who had completed SSLC and 100% of them were diploma-holders. Going by the nature of membership of the respondents and owning computer, among the MLAs, 95% were using computer; all the MLCs and the MPs (LS) were found to be using computer. Among the Corporators, 92%, and among the Seasoned Politicians, 95% were using computer.
- On funding of computers, more than three-fourth (75.9%) had bought it personally, 13.3% had got it as a gift from the Karnataka government (can also be read as Karnataka State Legislature Secretariat), and for 10.8%, the Central government had funded their computer purchase.

Datacard

- As much as 76 % of the respondent politicians said they owned datacard and of these, 66% said their datacard was their personal possession and 8.8% said the Karnataka government had funded it.
- As much as 56 % said that they used datacard on a daily basis. The next highest percentage – 23% - said they were using it rarely (once a week), followed by those who were using it occasionally – 11%, and 3% said they used it frequently.

Laptop

- It emerged from the frequency distribution that 84% of the respondents had laptop. Among those who had laptop, about 31% of the respondents had received it free from the Karnataka government, while 62% of them had purchased it on their own and 7% of the politicians had got the laptop from the Central government.
- Of all the respondents who had laptop, among the MLAs, 87% were using laptop. Among the MLCs, 92% were using laptop; among the

Corporators, it was 80 %; among the Seasoned Politicians, 70%; and among the MPs (LS), 78% said they were using laptop. Observing the usage from the education qualification point of view, among the graduates, 82% were using laptop, the post-graduates- 96%, and among those who had completed SSLC, 68% were using laptop.

- When it comes to frequency of using laptop, it was found that 27.6% of them were not using laptop despite having it and nearly one-fourth (26.7%) of the respondents were using it rarely. This was followed by those using it daily– 21.9%; occasionally 17.1%; and frequently 6.7%. Even among those who had laptop, those utilising it were fewer.

H_0 = There is no association between Educational qualification and usage of Laptop.

H_1 = There is an association between Educational qualification and usage of Laptop.

(i.e., to test the hypothesis that higher the educational qualification, greater (in terms of frequency) the usage of laptop)

Table 91: Association between levels of education and usage of laptop

Education	Usage* of Laptop		Total
	No	Yes	
School Dropout	2 (66.7)	1 (33.3)	3 (100.0)
SSLC	3 (27.3)	8 (72.7)	11 (100.0)
PUC	1 (50.0)	1 (50.0)	2 (100.0)
Diploma	3 (50.0)	3 (50.0)	6 (100.0)
Graduate	12 (20.7)	46 (79.3)	58 (100.0)
Post-Graduate	8 (32.0)	17 (68.0)	25 (100.0)
Total	29	76	105

* Frequency of using laptop. [Percentages are represented in parenthesis]
[Note: Here “No” means those who are having laptop but not at all using. On the other, if the respondent using laptop regularly and rarely (frequency of the usage), it is considered that he/she is using laptop and taken under “Yes”].

Chi-Square Test result (Table 91)

Pearson Chi-Square Value = 5.926

Asymptotic significance (p-value) = 0.3134

Fisher's Exact test (p-value) = 0.2133

From the Chi-square test result, it is observed that p-value is 0.3134 (chi-square = 5.926) which is greater than the significant alpha level of 0.05 (at 95% confidence level). Hence, the null hypothesis (H_0) is accepted and rejected the alternative hypothesis (H_1). In essence, there is no statistical evidence to conclude that the higher qualified respondents are using laptop (irrespective of frequency of usage) as compared to the lesser qualified respondents. As evident, 72.7% of those respondents who had studied only up to SSLC are using laptop. Yet, it could be drawn that the percentage of usage of laptop is higher with higher qualification of respondents. Thus, it can be said that laptop as a device help using new media by the respondents irrespective of their level of education.

iPad

- As much as 75% (94 of the 125 respondents) of the respondent politicians owned iPad. Among the 94 politicians, 67 politicians had received the high-end device free from the Karnataka government (State Legislature). Of the 67 politicians, 36 were MLAs, 26 were MLCs, three were Seasoned Politicians and two were Seasoned Politicians who happened to be MLAs. Among the ten MPs (LS), four had received iPad from the Central government funding.
- Those politicians who had received iPad from Karnataka government, about 62% (58 of the 94 respondents) were not carrying it while attending to public duties. Among those MPs (LS) who had purchased iPad with the Central government fund, all said they were carrying it for public duties.
- Only 10 of the 25 Corporators were having iPad which was their personal possession. Of them, 70% (7 of the 10) were carrying iPad

for public duties. The government/the civic body had not gifted iPad to the Corporators.

- The Corporators were not gifted with iPads from government unlike the legislators and some of the MPs. The Corporators who had purchased iPad on their own, were also found using it for public duties. Their percentage was more as to the members of the other democratic institutions.
- With regard to personally operating iPad, among the MLAs, 78% were operating it themselves while attending to public duties. Among the MLCs, 80% of them were operating iPad; among the Corporators, it was 86%; and among the MPs (LS) - 80%; and no Seasoned Politician said he/she was operating iPad personally while attending to public duties.

H_0 = There is no association between educational qualification and usage of iPad.

H_1 = There is an association between Educational qualification and usage of iPad.

(i.e., to test the hypothesis that Higher the educational qualification, greater (in terms of frequency) the usage of iPad)

Table 92: Association between levels of education and usage of iPad

Education	Usage* of iPad		Total
	No	Yes	
School Dropout	2 (50.0)	2 (50.0)	4 (100.0)
SSLC	5 (41.7)	7 (58.3)	12 (100.0)
PUC	1 (50.0)	1 (50.0)	2 (100.0)
Diploma	3 (50.0)	3 (50.0)	6 (100.0)
Graduate	9 (18.8)	39 (81.2)	48 (100.0)
Post Graduate	7 (31.8)	15 (68.2)	22 (100.0)
Total	27	67	94

* Frequency of using iPad. [Percentages are represented in parenthesis]

[Note: Here “No” means those who are having iPad but not at all using. On the other, if the respondent using iPad regularly and rarely (frequency of

usage), it is considered that he/she is using laptop and taken under “Yes”].
Chi-Square Test result (table 92)

Pearson Chi-Square Value = 6.070

Asymptotic significance (p-value) = 0.2994

Fisher’s Exact test (p-value) = 0.1783

From the chi-square test result, it is observed that p-value is 0.2994 (chi-square = 6.070) which is greater than the significant alpha level of 0.05 (at 95% confidence level). Hence, we accept the null hypothesis (H_0) and reject the alternative hypothesis (H_1). In essence, there is no statistical evidence to conclude that the higher qualified respondents are using iPad (irrespective of frequency of the usage) as compared to the lesser qualified respondents. As evident, 58.3% of those respondents who have studied only up to SSLC are using iPad. Yet, it could be drawn that the percentage of usage of iPad is higher with higher qualification of the respondents. Thus, it can be said that iPad as a device to access new media is used by the respondents irrespective of their level of qualification.

Mobile Phone

- Of the 125 respondents, all of them except one possessed mobile phone, a commonly used gadget.
- Among the total respondents, nearly 10% said they were using mobile phone to supplement their presentation/participation during official meetings. Among the graduates, only 10% of them and among the post-graduates, only 11.5% of them were using mobile phones to supplement their presentation/participation during the meetings.

iPhone

- Of the 125 respondents, only 35 (28%) of them were having iPhone. They had purchased the gadget on their own.
- As much as 90% of the respondents having it were found using it every day.
- iPhone is a fairly new hi-end device; the usage across the respondents irrespective of the nature of membership was uniformly distributed.

- Among the graduates, 23% were using iPhone; among the post-graduates, 42%; among those who had completed SSLC, 11%; and among those who had completed diploma, 50% were found using iPhone.

H_0 = There is no association between Educational qualification and usage of iPhone.

H_1 = There is an association between Educational qualification and usage of iPhone.

(i.e., to test the hypothesis that Higher the educational qualification, greater (in terms of frequency) the usage of iPhone)

Table 93: Association between levels of education and usage of iPhone

Education	Usage* of iPhone		Total
	No	Yes	
School Dropout	1 (33.3)	2 (66.7)	3 (100.0)
SSLC	1 (33.3)	2 (66.7)	3 (100.0)
PUC	0 (0.0)	1 (100.0)	1 (100.0)
Diploma	0 (0.0)	3 (100.0)	3 (100.0)
Graduate	0 (0.0)	15 (100.0)	15 (100.0)
Post- Graduate	0 (0.0)	10 (100.0)	10 (100.0)
Total	2	33	35

* Frequency of using iPhone. [Percentages are represented in parenthesis]

Chi-Square Test result (table 93)

Pearson Chi-Square Value = 10.253

Asymptotic significance (p-value) = 0.0683*

Fisher’s Exact test (p-value) = 0.0756*

[*Significant at 10 % level]

From the Chi-square test result, it is observed that p-value is 0.0683 (chi-square = 10.253) which is lesser than the significant alpha level of 0.10 (at 90% confidence level). Hence, the null hypothesis (H_0) is rejected and the alternative hypothesis (H_1) is accepted. In essence, there is a statistical evidence to conclude that the higher qualified respondents are using iPhone

(irrespective of frequency of usage) as compared to the lesser qualified respondents. Thus, it could be said that iPhone as a new media has been used only with the higher qualified politicians rather than the lesser qualified. On the other hand, only 35 respondents of the 125 respondents own iPhone which evidently shows that usage of iPhone is very less.

Use of Types of New Media

E-mail

- Among the respondents, 77% had e-mail account. While 13% did not have e-mail account, the rest 10% included those who could not recall and those who could not specify the address (e-mail ID).
- Interestingly, 92% of the respondents said they responded to e-mails they received, while 8% said they did not respond.

Using e-mail to respond to public issues

H_0 = There is no association between Educational qualification and using e-mail to respond to public issues.

H_1 = There is an association between Educational qualification and using e-mail to respond to public issues.
(i.e., to test the hypothesis that Higher the educational qualification, better is the response to public issues through e-mail)

Table 95: Association between levels of education and using e-mail to take up public issues

Education	Responses through e-mail		Total
	No	Yes	
School Dropout	0 (0.0)	2 (100.0)	2 (100.0)
SSLC	0 (0.0)	11 (100.0)	11 (100.0)
PUC	0 (0.0)	1 (100.0)	1 (100.0)
Diploma	0 (0.0)	6 (100.0)	6 (100.0)
Graduate	5 (7.8)	59 (92.2)	64 (100.0)
Post-Graduate	4 (16.7)	20 (83.3)	24 (100.0)
Total	9	99	108

[Percentages are represented in parenthesis]

An attempt was made to run the Chi square to test the above stated hypothesis. However, it emerges that more than 20% of the cells in the above table are zeros. That is, out of the 12 cells, 4 cells are having zeros. According to the theory, it is not advisable to apply Chi-square test in such cases.

Moreover, with regard to the question of responding to e-mails on public issues, it clearly emerges from the above table that the better qualified respondents are responding to the query/issues raised by the people through e-mail. Nonetheless, it must be noted that most of the queries through e-mails are handled by their respective secretaries. Hence, it cannot be concluded that the lesser educated politicians are unable to respond through e-mails.

Internet

- As much as 94% of the respondents had Internet connection at home and at office, while 6% of them did not have the facility at their residence.
- As much as 80 % of the respondents said Karnataka government had not funded their Internet connection at their residence. However, 9% said that their bills were footed by the government, while 11% said the Internet bill was being cleared by the Central government.
- As much as 68% of the respondents were using the Internet at office on a daily basis. Among the MLAs, 75% were using the Internet daily; among the MLCs, 76% were using; among the Corporators, 65%; among the MPs (LS), 78% were using the Internet at office daily. On an average, the rest 25% of the respondents who belonged to different types of democratic institutions were found using the Internet in a span of once in two days to weekly once.
- It was observed that irrespective of the nature of membership, the duration of time spent was less than 30 minutes by a majority of the respondents.
- On surfing the Internet, 38% of the respondents, despite having the Internet facility, were not surfing.

- In the above context, a hypothesis was drawn to know whether with the increase in duration of using the Internet, the downloading of information also increases. The statistical analysis showed that there was a significant and positive correlation between the time spent on the Internet and the volume of information downloaded.
- As much as 34% of those politicians who had the Internet facility surfed the Internet daily between 15 and 30 minutes. The next highest users (25%) were those surfing occasionally and 22% were surfing with the help of others. The data showed that a majority of the politicians hardly spent any time surfing the Internet. The maximum time they spent was less than 15 to 30 minutes.
- Among those surfing the Internet, 74% said they were surfing for the past two years.
- When it comes to the purposes for which the surfing was done, the topmost priority was collecting 'Information' (96% of the total respondents). The medium priority (77%) was for 'Surfing News' and the low priority (19%) was attached to 'Surfing for entertainment' information.
- On specific purposes of surfing the Internet, 16 types of utility were provided with a provision to choose more than one utility. Accordingly, all the respondents were found to be using it for e-mail purpose. As much as 73% used it for 'Collecting information for debates/discussions in meetings'; for 'Getting news online' (60%); for 'Educating their constituency people' (40%) and for 'Speech writing' (29%). The respondents were found using the Internet for the following personal use– Ticket Booking (30%); To Do Business (29%); for Paying Bills (27%); To Chat (7%); To Download Music (3%); and for Collecting Information Regarding Entertainment Field (3%).

H_0 = There is no association between Educational qualification and surfing of the Internet.

H_1 = There is an association between Educational qualification and usage of the Internet. (*i.e., to test the hypothesis that Higher the educational*

qualification, greater (in terms of frequency) the usage of the Internet)

Table 94: Association between levels of education and surfing of the Internet

Education	Usage* of the Internet		Total
	No	Yes	
School Dropout	0 (0.0)	2 (100.0)	2 (100.0)
SSLC	5 (31.2)	11 (68.8)	16 (100.0)
PUC	1 (50.0)	1 (50.0)	2 (100.0)
Diploma	0 (0.0)	6 (100.0)	6 (100.0)
Graduate	8 (12.1)	58 (87.9)	66 (100.0)
Post-Graduate	3 (12.0)	22 (88.0)	25 (100.0)
Total	17	100	117

* Frequency of using the Internet. [Percentages are represented in parenthesis]

[Note: Here "No" means those who are having the Internet but not at all using. On the other, if the respondent using the Internet regularly and rarely (frequency of usage), it is considered that he/she is using laptop and taken under "Yes"].

Chi-Square Test result (table 94)

Pearson Chi-Square Value = 7.425

Asymptotic significance (p-value) = 0.1909

Fisher's Exact test (p-value) = 0.2018

From the Chi-square test result, it is observed that p-value is 0.1909 (chi-square value=7.425) which is greater than the significant alpha level of 0.05 (at 95% confidence level). Hence, the null hypothesis (H_0) is accepted while rejecting the alternative hypothesis (H_1). In essence, there is no statistical evidence to conclude that higher qualified respondents are using the Internet (irrespective of frequency of usage) as compared to lesser qualified respondents. As evident, 68.8% of those respondents who have studied only up to SSLC are using iPad. Yet, it could be drawn that the percentage of usage of the Internet is higher with the higher qualification of

the respondents. Thus, it could say that the Internet as a new media is used by the politicians irrespective of their level of qualification.

Social Media Membership

- In all, 11 social media sites were given as options for the respondent politicians to indicate whether they were members. They had the option to indicate more than one site. Accordingly, 51% of the respondents were members of Facebook, 16% were members of YouTube and 13% were on Twitter. Hardly 4% of the respondents were the members of Google Circle. For the rest of lesser known social media sites like Tumblr, Reddit, Orkut, Wayn, Hi5 and MySpace, there were no members.
- When it came to awareness of the Internet-based platforms of communication and social media sites, the respondents were given five choices to indicate their responses. They had the option of choosing more than one. That included – Skype, ChatOn, Internet Chatting, WhatsApp and GoogleTalk+. Accordingly, 61% said they were not aware of any of the above communication platforms. As much as 32% of the total respondents were found to be aware of WhatsApp and an equal number of the respondents were aware of Internet Chatting. As much as 22% were aware of Skype and 14% of ChatsOn, followed by 13% of the respondents being aware of GoogleTalk+.

Facebook & Twitter

- Going by the nature of membership of the respondents, among the MLAs, 68% said that they were active on Facebook. Among the MLCs– 67%; among the MP (LS) -80%; among the Corporators– 93%; and the Seasoned Politicians– 50% were active on Facebook. The young respondents (36-45 years) were active on Facebook. This was followed by those belonging to the age group of 46-55 years.
- Among the graduates, 71 % said they were active on Facebook; among the post-graduates, 63%; and among those who had completed SSLC, 67% said they were active on Facebook.

- Among those who were active Twitterites all the MLCs, MPs (LS) and Corporators and Seasoned Politicians said they were active users. But among the MLAs, 60% were active on Twitter.
- Going by the age group, it was those who belonged to the age group of 25 -45 years who said they were active on Twitter. Among the graduates, 71% were active on Twitter; among the post-graduates – 60%; and SSLC pass – 50%.
- It emerged that Facebook and Twitter were not extensively (only 14% of the total respondents) used by the politicians for giving out information on government welfare and development activities for the public.
- As much as 38% of the respondent politicians were aware of blogs, while 62% were unaware of blogs.
- Among those who were aware of blogs, 92% were not bloggers. Hardly 8% of the respondents were found blogging, though not regularly.

NEW MEDIA EFFECTS

E-mail/blogs/website/mobile phone

- As much as 55% of the respondents were making their secretaries to reply to the e-mail they received, while hardly 6% were personally replying. And, 31% of the respondents were taking secretaries' help to reply.
- As much as 50% of the respondents were found not communicating on public issues with government departments over e-mail.
- On the reason for not using the e-mail facility for public purposes, the respondents were asked to indicate the reason(s). They could give more than one answer from the five reasons listed. Accordingly, 58% of the respondents stated that their 'Belief in Conventional Way of Communication' was the main reason for not using e-mail facility for the public purposes. Another 50% found that e-mail 'Did Not Help in Communicating' with government departments. As much as 19% were 'Unfamiliar with the Technology' and for 9% of the politicians, it was

the 'Language Barrier' which posed a problem to not being able to communicate with government departments. Here the language means English.

- As much as 82% of the respondents said English language did not pose them a challenge to them in using e-mail and social media networks.
- The respondents having their personal websites were not many, as 74% of them were found not having them. And, 26% had their personal websites. As much as 58% were found not checking websites of government, while the rest 42% were checking websites.
- As much as 73% of the respondent politicians were not checking websites of political parties and politicians, while the rest 35% of the respondents were checking.
- Regarding the opinion on e-governance, multiple choices were given to express their opinion. Accordingly, 85% of the respondents were found to be of the view that e-governance Benefits the Public, It Improves Administration (82%), Public Not Aware of It (42%), Not Helping Public (6%) and those who had No Opinion (2%).
- Among those who were surfing the Internet, 66% were downloading information on public issues and the rest (34%) were not downloading.
- Regarding the help obtained from the use of new media, the respondents were given a list of ten kinds of usefulness. They could choose more than one option. Accordingly, 84% of the total respondents said the use of new media had helped them. The new media included e-mail, blog, social media tools, etc., for their 'Routine office work.' A majority (84%) of the respondents said they were taking the help of new media for their 'Routine office work.'
- Among the MLAs, 67% were taking the help of new media for their routine work. Among the MLCs, - 96%, MPs (LS) – 90%, the Corporators– 76% and Seasoned Politicians– 80% were using it for routine work.
- In terms of releasing press notes using new media, among the MLAs,

23% said they were releasing press notes via new media. Among the MLCs, 36%; among the MPs (LS) – 60%; among the Corporators– 20%; and among the Seasoned Politicians– 36% were releasing press notes with the help of new media.

- Among the age group, 17 % of the respondents who belonged to the age group of 22-35 years said they were 'Releasing press notes' through new media platforms. And, 27% of the respondents who were in the age group of 36–45 years, were using new media for press notes, and 38% belonged in the age group of 46-55 years and 31% in the age group of 56-65 years who were found releasing press notes via new media.
- The respondents were found using new media the least (1%) during 'Political Crisis.'
- For 58% of the total respondents, new media served as an 'Easy Mode of Communication'; for 54%, it was a 'Quick Way of Getting Connected with People' and for 48% it was a 'Mode to Express Their Views.'
- For 34% of the total respondents, new media usage was for 'Election Campaign'; for 33%, it was for 'Releasing Press Notes to Media Houses' and for 'Uploading Video Clippings/Photos' of their public functions. For 29%, it was for 'Clarifying Media Reports' and hardly 4% were using new media during 'Political Crisis.'
- The Seasoned Politicians were the highest among those who found that new media had helped them in 'Clarifying Media Reports' (44%), for 'Election Campaign' (44%) and to 'Express Their Opinion' (60%).
- Among the MLAs, 49% said new media had helped them in 'Easy Communication,' 66% said it had helped them in "Routine Work" and 26 % - during 'Election Campaign.' Among the MLCs, 54% said new media had helped them in 'Easy Communication,' 96% - for 'Routine Work'; 15% – for 'Election Campaign.' Among the Corporators, 52% said it had helped them in 'Easy Communication,' 76% - 'Routine Work' and 28% - for 'Election Campaign.' Among the MPs (LS),

80% said new media had helped them in 'Easy Communication,' 90% - for 'Routine Work' and 50% - during 'Election Campaign.'

- When it came to uploading video clippings, it was the MLAs (33%) and the MPs-LS (50%) who were the highest among the respondents. The rest were not found to be eager to upload their videos.
- As much as 91% of the politicians were using mobile phone to listen to public grievances and to speak to officials.
- As much as 85% of the politicians were using mobile phone to get feedback on public importance from people.
- Among the users of mobile phone, 66% used it to reach out to the media houses.
- Among the mobile phone users, 21% of them were using mobile phone for election campaign purpose.
- Hardly one respondent (0.8%) was using mobile phone for recording public grievances.
- Only 8% of the respondents were utilizing mobile phone for all the above mentioned public-related activities.
- Cumulatively, about 67 % of the politicians were making between 50 and 100 calls a day, indicating that they were making good use of the communication gadget.
- In the above context, a hypothesis was drawn to know whether there exists any significant difference in the average number of calls made per day across the nature of membership of democratic institutions. The statistical analysis showed that there exists a difference in the average number of phone calls made per day across the various types of membership. It was the MLAs who were making more number of calls.

H₈: There is no significant in Average number of calls made per day across the types of membership of politicians of democratic institutions (i.e., between the Corportors and MLCs, MLAs & MLCs, MLAs & MPs so on).

It is seen from the one-way ANOVA result (Table – 111), that there is

a significant (statistically) difference in overall mean number of calls made per day [$F_{(3,121)} = 3.021$, $p=0.032$, $p<0.05$] among the four types of membership of the politicians. Hence, the null hypothesis is rejected and the alternative hypothesis is accepted. In other words, mean number of calls made per day differ significantly between the each pair of politicians.

One way ANOVA result

Table 111: One-way ANOVA between types of membership of the politicians and average number of calls made per day

	Sum of Squares	df	Mean Square	F	p-value
Between Groups	17421.531	3	5807.177	3.021	0.032*
Within Groups	232628.469	121	1922.549		
Total	250050.000	124			

* Significant at 5 % level

Table 111a: The Scheffe's post-hoc test result between pair of types of membership of the politicians for Average number of calls made per day

Number of SMS sent				
Types of membership of politician	Category of politician	Mean Difference	Std Error	p-value
MLA	MP-LS	28.55	10.20	0.055*

* Significant at 10 % level

Table 111b: Descriptive statistics

	N	Mean
MLA	39	85.0
MLC	26	63.0
MP-LS*	35	36.0
Corporator-BBMP	25	45.0
Total	125	44.0

The average number of calls made per day among the pairs of the four categories of types of membership of the respondents is checked by using post-hoc tests. Accordingly, the Scheffe's post-hoc test is used in such

situation and the result is depicted in Table –111 (a). From the Scheffe's test result seen in Table – 111 (a), it is seen that there is a significant (statistically) difference in mean number of calls made per day between the MLA and the MP-LS.

The positive sign in the mean difference (see table 111a) indicate that MLAs have a slight edge over their counterpart namely the MP-LS in terms of responding to people using new media technology. This is supported by descriptive statistics provided in Table 111b.

- Cumulatively about 66% of the politicians were receiving calls in the range of 50 to 100.
- All the respondents (except the ones who did not have) had shared their phone number with the public.
- As much 51% of the politicians disclosed that they were not sending SMS (text messages) at all.
- As much as 40% of them were sending SMS in the range of 25 to 50 numbers a day, followed by 4% stating that they send anywhere between 51 to 100.
- As much as 36% of the respondents said that they did not read messages they received and hence they were not keeping count of the messages.
- Among the mobile phone users, 26% said they received less than 25 messages a day, while 18% said that they received 25 to 50 messages.
- As much as 90% of the respondent politicians were not using their mobile phone to supplement their presentation/participation in meetings and discussions. Among those 10% who were supplementing their contribution to meetings/discussion using mobile phone, the MPs (LS) and the Corporators constituted the highest percentage.
- Those who were using mobile phone to supplement their presentations, the highest number fell in the age bracket of 36-45 years. Among them, the graduates were the highest to use mobile phone.
- A majority– about 71% of the politicians among the 105 respondents who had laptop were not using the device for public duties.

- Among those who were operating laptop on their own for public duties, 86% of the Corporators were using the device on their own while attending to public duties. Among the MLCs – 80%; among the MLAs – 78%; and among the MPs (LS) – 60%.
- The respondents in the age group of 36-45 years were the highest (100%) to operate laptop personally for public duties. The post-graduate respondents who were highest (75%) to operate laptop personally while attending to public duties, followed by those who were graduates.
- When it comes to personally operating laptop while attending to public duties, 33% of them were not operating it on their own. This also implied that it was their secretaries who were operating laptop for them.
- Among the MLAs, 49% of them were carrying iPads while attending public duties. Among the MLCs, it was 80%; among the Corporators – 86%; and among the MPs (LS) – 60% were carrying iPad while attending to public duties. Among the age group, those respondents who were in age group of 36-45 years were the highest (53%) to carry iPad while attending to public duties. Going by education qualification, the post-graduates were the highest to carry iPad (50%).
- Among the MLAs, 78% were operating iPad on their own while attending to public duties. Among the MLCs– 80%; among the Corporators– 86%; and among the MPs (LS) – 60%. Among the graduate respondents, 74% of them said they were operating iPad on their own while attending to public duties. Among the post-graduates, it was 64%; and among those who had completed SSLC, all said they were operating iPad on their own.
- Of the 4 MPs (LS) who had received iPad from the Central government, only two were using it for public duties.
- As much as 78% of the respondent politicians were not reading newspaper online and 22% were reading newspaper online. Going by the nature of membership of the respondents, 28% of the total MLAs

were reading newspaper online. Among the MLCs, it was 19%, among the MPs (LS) – 44%, among the Corporators– 16% and among the Seasoned Politicians– 20% were reading newspaper online.

- As much as 89% of the respondents were not watching television programmes online and 11% of them were watching online. Considering the nature of membership of the respondents, 10% of the total MLAs were watching television programmes online. Among the MLCs, it was 8%; among the MPs (LS), 22%; among the Corporators- 12% and among the Seasoned Politicians – 12%.
- The respondent politicians could indicate their responses on usage of laptop under five types of utilities. Accordingly, nearly half (48.6%) of the respondents were using laptop for accessing the Internet alone and another 25.7% to download information. Hardly 8.57% of them were using the device for sharing 'Information in Meetings' and 19% used it for 'Making Presentation in Meetings.' Nearly 43% of the politicians who possessed laptop were yet to maximise it as a supportive device for public-related activities.
- As much as 58% of the respondents' family members were using various types of media devices some of which are new, while some are not so new. As much as 34% of the respondents' family members used computer (34%), laptop (27%), iPad (17%) and iPhone (0.8%) and those who were found not using any of the devices were 2%.
- With respect YouTube, 82% of the respondents were aware of YouTube. However, only 30% of them were accessing YouTube occasionally, while 70% were not at all accessing it. Among those who were using YouTube, 81% of the respondents were uploading videos of their public functions. However, 92% of them were uploading only once a month.

Facebook and Twitter Usage

- Among those who had Facebook account, 66% were found to be not active on the site.

- Though Twitter account holders were lesser compared to Facebook members, 63% of them were active on their Twitter account.
- To find the nature of participation of the respondents on Facebook and Twitter, five multiple choices were given. Accordingly, the most chosen nature of participation on Facebook was to 'Post Views/Issues' (69%). This was followed by activity of 'Sharing Photos' (58%), 'Giving Comments' (52%), 'Posting Views on Government Programs for the benefit of public' (27%) and 'Initiating Debates' (14%).
- In the context of the nature of participation (i.e., sharing of photos, posting views/photos, giving comments, posting government programmes and initiating debates) on social media site Facebook by education level, a hypothesis was drawn to know whether the nature of participation on Facebook was independent of education level. The analysis found that there was no statistical evidence to conclude that the nature of participation on Facebook was dependent on education level. As a support of evidence, the data showed the percentage of nature of activities on Facebook by the lesser qualified (SSLC pass) politicians were similar in proportion to those who were graduates and post-graduates.

The statistical analysis showed that there was no evidence to conclude that nature of participation on Facebook increases with the nature of membership of the democratic institutions. As a support of evidence, the data showed that the percentage of the members of lower level of democratic institutions was same as that of the members of higher democratic institutions.

The statistical analysis showed that there was no evidence to conclude that the nature of participation on Facebook was dependent on the age group. As a support of evidence, the data showed that percentage of respondents uploading different nature of activities by the lesser age group (25-45 years) was in the same proportion to those who were in the higher age group (46-55 years).

H_1 = There is an association between age group and nature of participation on Facebook.

(i.e., to test the hypothesis that Higher the age group, better participation (in terms of importance to public issues) on Facebook).

Table 102 : Association between the age group and nature of participation on Facebook.

Age group	Nature of participation* on Facebook					Total responses**
	Sharing photos	Posting views/photos	Giving comments	Posting govt programmes	Initiating debate	
25 – 35	6 (35.3)	5 (29.4)	6 (35.3)	0 (0.0)	0 (0.0)	17 (100.0)
36 – 45	13 (33.3)	8 (25.9)	10 (29.6)	7 (9.3)	4 (1.9)	42 (100.0)
46 – 55	18 (28.0)	14 (24.0)	16 (20.0)	5 (16.0)	1 (12.0)	54 (100.0)
55 – 65	7 (28.0)	6 (24.0)	5 (20.0)	4 (16.0)	3 (12.0)	25 (100.0)
65 and above	1 (20.0)	1 (20.0)	1 (20.0)	1 (20.0)	1 (20.0)	5 (100.0)
Total	45	34	38	17	9	143

* Nature of participation is given in order of importance. [Percentages are in parenthesis]

** Responses are considered instead of Respondents.

Chi-Square Test result (table 102)

Pearson Chi-Square Value = 12.508

Asymptotic significance (p-value) = 0.7083

From the Chi-square test result, it is observed that p-value is 0.708 (Chi-square value=12.508) which is greater than the significant alpha level of 0.05 (at 95% confidence level). Hence, the null hypothesis (H_0) is accepted and the alternative hypothesis (H_1) is rejected. In essence, there is no statistical evidence to conclude that higher age group respondents are active on Facebook in posting government various programmes and also initiating more public debate compared to the lesser qualified respondents or vice

versa. On the contrary, as evident from the table 102 that higher percentage of the lesser age group are restricting their participation with sharing photos, posting view and giving comments.

Twitter

H_0 = There is no association between age group and nature of participation on Twitter.

H_1 = There is an association between age group and nature of participation on Twitter.

(i.e., to test the hypothesis that Higher the age group, better participation (in terms of importance to public issues) on twitter) or vice versa.

Table 103: Association between age group and nature of participation on Twitter

Age group	Nature of participation* on Twitter				Total responses**
	Sharing photos	Posting views/ photos	Giving comments	Posting govt programmes	
25 – 35	1	1	1	0	3
36 – 45	1	1	1	0	3
46 – 55	4	6	6	0	16
55 – 65	1	1	1	0	3
65 and above	0	1	1	1	3
Total	7	10	10	1	28

* Nature of participation is given in order of importance. [Percentages are in parenthesis]

** Responses are considered instead of Respondents.

An attempt was made to run the chi square to test the above stated hypothesis. However, it emerges that more than 25% of the cells in the above table are zeros. That is, out 20 cells, 5 cells are having zeros. According to the theory, it is not advisable to apply Chi-square test in such cases. However, it is clearly evident from the above contingency table that firstly there is very lesser percentage of twitter users in the study. Secondly, across the age group, it is observed that respondents less than 45 years are mostly

using twitter to posting views and giving comments. Uploading the government programmes as well as debate initiating is not seen across the age group.

- When it comes to nature of participation on Twitter, the most frequent activity was 'Giving Comments' (63%), followed by 'Sharing of Photos' (44%) and 'Posting Information on Government Programmes' (6%).
- In context of the nature of participation (i.e., sharing of photos, posting views/photos, giving comments, posting government programmes and initiating debates) on Twitter by education level, a hypothesis was drawn to know whether the nature of participation on Twitter was independent of education level. The analysis found that there was no statistical evidence to conclude that the nature of participation of various activities on Twitter was dependent on education level. As a support of evidence, the data showed the percentage of politicians uploading different activities on Twitter by the lesser qualified (SSLC pass) was similar in proportion to those who were graduates and post-graduates. The statistical analysis showed that there was no evidence to conclude that nature of participation on Twitter increases with the nature of membership. As a support of evidence, the data showed that the percentage of participation of the politicians on the nature of activities on Twitter of members of lower level of democratic institutions was the same as that of the members of higher institutions.
- Among those who were active on Facebook and Twitter, only 27% of the respondents were checking comments posted by State/National/ International politicians.

New media as Tools of Political Communication

- When it came to taking online help by the respondents for promoting political parties, 82% of them were found 'Not Taking Help,' while the rest 18% had 'Taken Assistance.' Among the MLAs, 15% said they had taken online help to 'Promote Party.' Among the MLCs– 8%; among the MPs (LS) – 44%; among the Corporators– 20%; and among the Seasoned Politicians– 20% said they had taken online help to 'Promote their political parties.'

- When it came to taking online help to promote department programmes, only 14% of the respondents said they had taken online help. Among the MLAs, 22% said they had taken online help to 'Promote department programmes.' Among the MLCs – 8% among the MPs (LS)–22%; among the Corporators– 8%; and among the Seasoned Politicians–5% had used online assistance to 'Promote department programmes.'
- When it came to taking online help to 'Promote political career,' 40% of the total respondents said they had taken help. Among the MLAs, 33% of them said they had used online for 'Promoting their career.' Among the MLCs–27%; among the MPs (LS) – 67%; among the Corporators– 36%; and among the Seasoned Politicians– 50% had taken online help for 'Promoting their career.'
- The MLAs were the highest among the members of democratic institutions to take online help to 'Promote their political career.' To a certain extent the MPs (LS) had taken help, but they were next only to the MLAs.
- Among the respondents, only the MLAs (39 in number) and the MLCs (26) were imparted training to use new media and electronic devices by the Karnataka Government. Of these, 77% (50 respondents) were found attending the training session to use new media and 17% had not attended and the remaining 6% could not recollect whether they had attended or not.
- As much as 91% of the respondents had recommended that politicians should use new media. Those who were not in favour of it were 2% and those who had no opinion were 6%. In general, the opinion was in favour of usage of new media by politicians.
- The respondents, who were found using online media including social media sites, were found using it for self-promotion by posting photographs of them and their public programmes.
- The political parties were just using their websites as a billboard to advertise or talk about the activities and to promote state/national level leaders of the parties.

- The respondents were not equally enthusiastic to use the Internet-based media for publicity or to keep in touch with constituents on the grounds that the Internet was not available for everyone and everywhere.
- Most of the content on the digital platforms of the respondents and the political parties was not useful for the public.
- The content on social media sites and websites mostly were in English and were monologues.
- The political party websites were not interactive.
- The respondents, by and large, were not engaging people with either political debate, discourse or conversation.
- The respondents and political parties were found to be shy or unenthusiastic to raise and debate-sensitive issues though debates could be held without disturbing the peace of society or hurting the sentiments of anyone.
- The respondents, who otherwise do not use online media, were found trying to use online platforms when they contested elections.
- The respondents and political parties were not found using digital forums for abusing their opponents though they mock at each other.
- All the major political parties in Karnataka were having websites and some of them had presence on social media sites too.
- More than the political parties, it was individual politicians who were found active often on social media sites.
- The websites of the parties and the respondents lacked transparency and also not paying attention to give a professional touch to the designing aspect.

In terms of the impact of new media on the respondents, it was found that there was considerable impact in terms of usage of devices that helps in accessing new media and also awareness regarding popular social media networking sites. However, the usage as well as awareness is not very extensive and also the purpose for which they were used is limited. And the

usage was found to be independent of their age, education and nature of membership of the democratic institutions. For example, with respect to using laptop, the data showed that about 73% of those respondents who had completed 10th standard were also using laptop though the percentage of its usage was higher among those who had higher qualification. As a device, laptop had made an impact in terms of usage irrespective of the qualification. The same holds good for the usage of iPad wherein 58% of the respondents among those who had completed 10th standard found using this electronic device. The usage of iPad was found to be same among the Corporators and MLCs as compared to the MPs. With statistical evidence, it was established that the usage of the devices to help in accessing new media was effective across the respondents irrespective of their nature of membership. This does not imply that the usage was for the maximum extent for the good of the public. Devices like laptop and iPad were found to be more used for mailing purpose and accessing information.

But the usage of the devices by the respondents for attending to public duties was found to be limited. Even those operating the devices on their own were very limited. The impact of the usage of the devices would be more if the respondents themselves operate them. However, the usage was found to be independent of the nature of membership. But this argument did not hold good while assessing the usage of iPhone. Firstly, the usage itself was limited with hardly 28% of the respondents found having an iPhone. Secondly, the statistical analysis showed that the usage was more among those who had higher education. Thirdly, among the limited number of users, it was the younger politicians who were found using iPhone more than the others.

When it comes to surfing the Internet from the utility point of view, 80% of the respondents were found to be surfing the Internet. The main purpose of surfing was to send e-mail for routine office work, extract information, followed by searching for news and then for entertainment purpose. Indeed, the Internet was found to be having a good impact though the purpose for which it was used was limited.

Coming to the usage of popular social media networking sites like Facebook, there was no statistical evidence to conclude that the higher educated respondents were making better usage of the sites than the lesser qualified for the public purpose. On the contrary, it was found that among those who were better qualified, a majority (75%) of them had restricted their usage for sharing photos, posting views and making comments. But for the question whether social media sites like Facebook had made an impact on the respondents in terms of usage, the result was not very impressive. A good number of the respondents had their presence on social media sites but the activities were for limited purpose. The politicians were found to be still continuing to have their debates/discussions in traditional media such as television rather than doing it online or giving equal primacy to both the media. Such mindset was seen across all the types of members irrespective of their age, qualification and nature of the membership on the democratic institutions.

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Extension Research

Impact of Information and Communication Technology on Agricultural Sector in Karnataka: A Case Study of Hassan District

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Abstract

Agriculture sector is considered to be the most predominant sector of Indian economy. In the last few decades research, extension and farmers have contributed significantly to increase food production from 50 million tonnes in 1950-51 to a land mark achievement of an estimated 265.04 million tonnes in 2014-15. The total demand for food production is estimated to reach 280 million tonnes by the year 2020 -21. Meeting this demand necessitates a growth rate of nearly 2 percent per annum in food grain production and the agriculture sector has to grow at a minimum targeted four percent per annum.. Given the challenges, the arrival of Information Communication Technology (ICT) is well timed. The benefits of the green revolution greatly improved agricultural productivity. Importance of ICT in the process of agriculture and economic development of India and to improve the farmer's knowledge and crop yield is recognised. At present, a network of ICAR Institutes, State Agricultural Universities, Krishi Vigyan Kendras and Kisan Call Centres spread across the country are responsible for developing, refining and disseminating innovative and latest technologies to reach the farmers. This study is based on a primary survey of 400 farmers belonging to four taluks of Hassan district of Karnataka. An enumerator- based questionnaire was used to collect information. The interview method was adopted to collect data from farmers who were involved in farming activities. A sample of 400 farmers was selected based on sample size determination method. Along with simple table and charts, independent t-test is used to identify the differences between ICT users and non ICT users in the returns of agricultural commodities of paddy, maize, and potato.

Keywords : Information, Technology, Users, Agriculture, Farmers, Knowledge, ICT

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INTRODUCTION

Agriculture sector is considered to be the most predominant sector of Indian economy. “From last few decades’ research, extension and farmers efforts have all contributed significantly in enhancing food production from 50 million tons in 1950-51 to a land mark achievement of an estimated 265.04 million tons in 2014-15” (India 2016). The total demand for food production is estimated to reach 280 million tons by the year 2020-21. “Meeting this demand necessitates a growth rate of nearly 2 percent per annum in food grain production” (Singh 2011) and the agriculture sector has to grow at a minimum target of four percent per annum. Approaching paper on the India’s 12th five year plan (2012-17) states that the “weakness in the economic performance thus far is that growth in the farm sector” and the average annual growth rates of GDP in agriculture and allied sectors during the 11th plan period (2007-12) was 3.3 percent (GoI, 2013). So, there is a quick need of vibrant, innovative and dynamic approach to be adopted for agricultural development in order to serve farmers better and achieve target rate. Further, land and water resources are almost reaching their limits; hence, achieving food security heavily relies on “Knowledge Resource.” Therefore, ICT dissemination of adequate and accurate information is very essential to sustain agriculture.

Information and Communication Technology (ICT) consists of three main technologies, namely, Computer Technology, Communication Technology and Information Management Technology. These technologies are applied for processing, exchanging and managing data, information and

knowledge. ICT is technology that supports activities involving information such as gathering, processing, storing and presenting data. Increasingly, these activities are collaborative and communicative. Hence, IT has become ICT integrating Information and Communication Technology. ICT is a field of work and study that “Includes technologies such as desktop and laptop computers, software, peripherals, and connections to the internet that are intended to fulfill information processing communications functions”(Statistics Canada, 2008).

Information and communication technologies facilitate the processing and transfer of information, i.e. communication by electronic means. ICT generally links Information processing devices like computers with telecommunication technologies like telephones, wired or wireless networks. ICT is a range of electronic technologies which when converged in new configurations are flexible, adaptable, enabling and capable of transforming organizations and redefining social relations. “The range of technologies is increasing all the time and there is a convergence between the new technologies and conventional media” (Michiels and Van Crowder, 2001).

Regarding special features are concerned, speed is one of them that has bridged the infinite distance. ICT is an astounding storehouse of information, which enhances the knowledge of people and disseminates innovations to the people. ICT intervention in agriculture indicates the diffusion of innovations to farmers widening horizon of knowledge of farmers. The technology of virtual reality is helping areas of research in certain disciplines. The information is available instantaneously covering the information void in the rural areas, which were not privy to relevant information. Interactive technology provides space for farmers prioritizing participation. ICT has changed the dynamics of human communication causing paradigm shift in extension education.

Improving Information Availability and Delivery of Services’ for sustainable agricultural growth and livelihood are the main aims of providing ICT services to the farming community. The well accessed information by

the ICT is presumed to increase productivity thereby increasing sustainability of agriculture. The importance of ICT application is based on following factors:

- Improved information access and delivery of services to the farming community;
- Improved productivity and profitability of farmers through better advisory systems;
- Efficient and Increased utilization of information by stakeholders for their decision making;
- Faster and efficient redressal of farmers' grievances;
- Better monitoring of government schemes, which directly impact the farmers;
- Improved transparency and accountability;
- Direct feedback from farming community to the decision makers in the state;
- Efficient management (Development, Conservation, Allocation and Utilisation) of resources;

ICT can affect agricultural sector in five significant ways:

- Raise long-term growth potential through increased productivity and resultant improvement in overall individual competitiveness. The competitiveness is increased by exchange of firsthand information from one farmer to other wherein, the knowledge on crop cultivation and cropping pattern increases, which may result in better yield.
- Create employment opportunities (both high skilled and low skilled). This not only helps in exchange of information but also improves the skills of farmers towards adapting to new crops and allied activities. This also generates employment; the government operated *Raitha Samparka Kendra*, *Kissan Call Centre* and other information kiosks manned by personnel who provide employment opportunity and links unskilled, low skilled and skilled under one umbrella.
- Spread education and literacy. The literacy is not literacy in mere sense

of reading and writing; literacy refers to enhanced knowledge and awareness of new things and technology. The ICT brings in new information and thereby educates farmers on new inventions and innovations in the field.

- Provide universal information services. For example, a farmer in a remote village of India can connect with a farmer in a remote village in China. Thanks to technology, that has made this possible. This paves way for universalisation of knowledge.
- Deliver e-Governance (leading to transparency and better accountability). Of late, all agricultural data and information are digitised. This provides free access to these e-resources from anywhere and at any point of time. This has in a way brought in checks and balances in the system creating transparency. Going by one example of 'FORTNET' a national government website, which gives detailed information on fertilizer supply to each state and to the respective district. This definitely increases transparency and brings in accountability.

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

The theoretical conceptualisation of technology in economics can be traced back to neoclassical who considered technology to be an exogenous variable to the economic system and this is formally modeled by Solow in the year 1956. They considered technology to be an exogenous variable to the economic system. However, later economists like Kenneth Arrow, Paul Romar considered technology as an endogenous factor into the growth process and formulated a new set of theories called New Growth Theories. From 1984 onwards lot of research has been done on this topic and the Noble Prize for the year 2001 was awarded to the research on 'asymmetric information'. Many of the central theories and principles of economics are based on assumptions about perfect information. Starting from Adam Smith many economists have laid emphasis on the subject either directly or indirectly. Economists like Schumpeter, Kenneth J Arrow, Fredrick Von Hayek, George

Akerlof, Michael A Spence, and Joseph E Stiglitz have made notable contribution to this subject.

Access to right information and its proper utilisation for the farming community is the order of the day which needs to be practiced says Mahapatra (2012), in the work entitled, "Role of Information in Agricultural Development of Odisha" which aims to discuss information needs of various stakeholders in agricultural sector in developing states like Odisha. The role of information technology to develop agricultural research, education and extension to improve quality of life in rural areas is well established which requires facilitating farmers in improving the efficiency and productivity of agriculture and allied activities. The potential of IT lies in bringing about an overall qualitative improvement in life by providing timely and quality information inputs for decision making suggests, Pinjar et. al., (2012), in their work entitled, "Information technology in agriculture development - Need and scope", the need for narrowing down the enormous gap between the researchers and farmers is highlighted. Stressing upon the same fact that, on winning the confidence of the poor farmers and make them aware of the benefits of ICT in agriculture Deepak Kumar (2005), in his work entitled "information and communication technology in Indian agriculture," argues that, Indian agriculture sector is leveraging the information and communication technologies to disseminate the right information at the right time. The cost factor in face-to-face information dissemination and the difficulties in reaching the target audience have necessitated the introduction of ICT in agriculture.

OBJECTIVES

The present study forms part of agricultural economics by emphasising the primary sector growth and development. Services and facilities available for farmers to become efficient and smart to enhance their agriculture production particularly. Information and Communication Technology is of utmost importance, which determines the effectiveness and utilization of services and facilities to improve both farmer and nation at macro and

micro level. In particular, the agricultural production of the nations and farmers cultivation method and knowledge depends on innovation technology as well as information technology. Thereby, Information and Communication Technology is a very important variable in determining agricultural production and farmers' efficiency in farming activities. So present study focuses on how ICT is emphasised in agriculture sector to create awareness and influence the farmers.

- To compare the agricultural returns of ICT users and non ICT users.

Hypothesis for the Study

H₁ There is significant difference in the agricultural returns of ICT users and non-ICT users.

METHODOLOGY

The study was carried out in Hassan district of Karnataka state. Four taluks viz. Arkalgud, Holenarasipura, Hassan and Belur were selected for the study. In each taluk 100 respondents were selected based on simple random sampling method. Totally, the sample includes 400 small and marginal farmers. This study mainly focuses on the farmers cultivating Maize, Paddy and Potato. Keeping in view the objectives of the study survey method was found appropriate for this study. Structured questionnaire was used as a tool of data collection. The questionnaire included questions on socio economic demographic profile besides measuring the impact of ICT before and after adoption of ICT. Collected data was tabulated using SPSS and analyzed accordingly. Along with simple table and charts, statistical and economic techniques used to test the hypothesis. Independent t-test used to identify the difference between ICT users and non-ICT users based on income of farmers from growing crops of paddy, maize, and potato.

ANALYSIS**Demographic Profile of the Respondents**

Table 1.1: Caste Representation of the Respondents

Caste	No. of Respondents	Percent (%)
SC	61	15.2
ST	49	12.2
OBC	274	68.5
GM	16	4.0
Total	400	100.0

As in Table-1.1, 68.2 percent of the respondent farmers belong to OBC category while 15.2 percent to SC category. Respondents from ST category constitute 12.2 percent and 4.0 percent belong to general category.

Table 1.2: Age Group of the Respondents

Age	No. of Respondents	Percent
20-30	16	4.0
31-40	88	22.0
41-50	142	35.5
51-60	87	21.8
61>	67	16.8
Total	400	100.0

Regarding the age group of respondents, it is observed from Table-1.2 that the highest (35.5) percent of respondents are in the age group of 41 - 50 years followed by 22 percent in the age group of 31 - 40 years. Over 21.8 percent of respondents are in the age group of 51 to 60 years and 16.8 percent of respondents are 61 years and above.

Furthermore, on the academic aspect, it is observed from Table-1.3 that farmers are less educated and the highest of them (29 percent) have studied upto primary education followed by 27 percent of respondents who have studied upto higher primary. The third largest group is that of illiterates (24.5 percent). First level of College education has been completed by 14.5

percent of respondent farmers. Cumulatively only about five percent of respondents are graduates indicating the low education profile of the sample.

Table 1.3 : Education Status of the Respondents

Education	No. of Respondents	Percent (%)
Illiterate	98	24.5
Primary	116	29.0
High School	108	27.0
PUC	58	14.5
Degree	9	2.2
PG	8	2.0
Others	3	.8
Total	400	100.0

Table 1.4 : Annual Income Level of the Respondents

Income in Rs	No. of Respondents	Percent (%)
<25000	44	11.0
25001-50000	150	37.5
50001-100000	136	34.0
100001-500000	70	17.5
Total	400	100.0

The data on annual income of the respondents is provided in table 1.4. The figures include sum total of income of all the earning members in the family. Accordingly, 37.5 percent of the respondents acknowledged that their total annual earning is less than Rs 50,000 followed by 34 percent of respondents in income bracket between Rs 50,000 to Rs 100,000 annually. About 18 percent of respondents are in the family income category between one lakh to 1.5 lakhs annually. Over 11.0 percent have an income less than Rs.25,000 indicating low income profile of the farmers.

Usage and Utilization of ICT

This section describes the views of the respondents about the usage of ICT which is critical for the present study. Firstly, when asked whether they are using ICT in agriculture, it is observed from Fig 1.1 that 67 percent of the respondents were not using the ICT in agriculture while only one third (33 percent) of the respondents use ICT in agriculture. This clearly indicates that many respondents are not familiar or not aware of usage of ICT in agriculture.

Fig 1.1: Usage of ICT in Agriculture

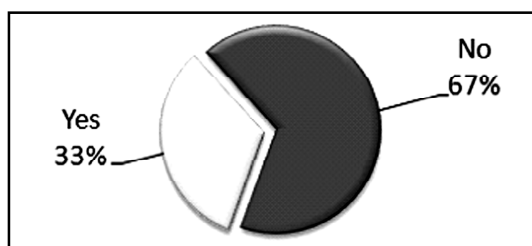
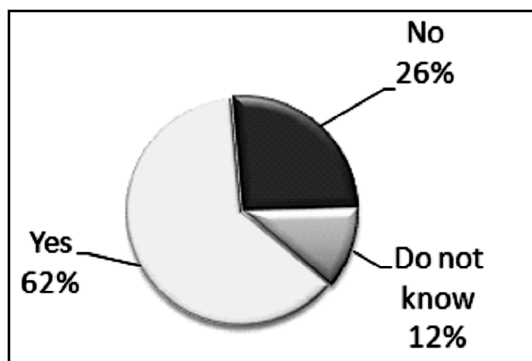


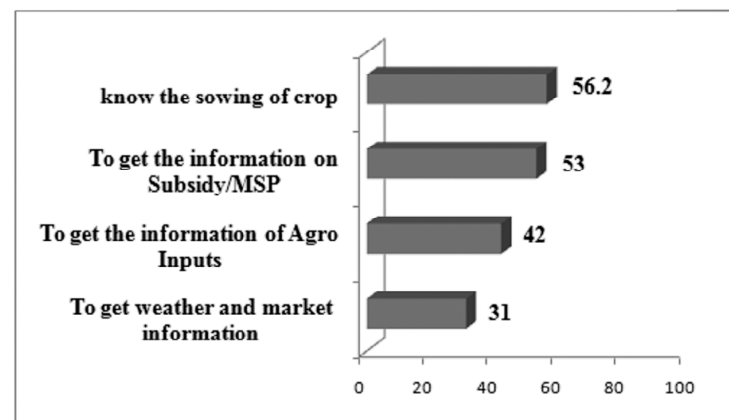
Fig 1.2: Is ICT Necessary for Agriculture



Data N = 400

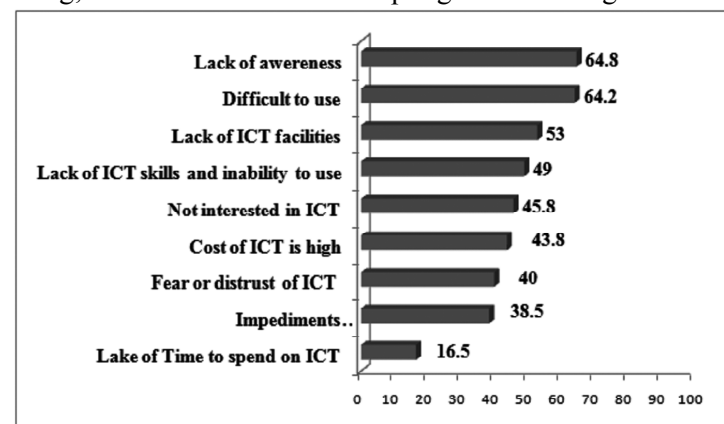
Further, when asked whether ICT is necessary for agriculture activities, 62 percent (Fig: 1.2) replied affirmatively that it is indeed essential while nearly one fourth (26 percent) of them categorically rejected usage of ICT as a necessity for agriculture. Nearly 12 percent of respondents were unable to make a decision.

Fig: 1.3 : Purpose of Adopting ICT in Agriculture



The query about the purpose of adopting the ICT tools in agriculture was posed to those respondents using ICT tools for agriculture purpose. Accordingly, 56.2 percent (Chart 1.3) of the respondents stated that they use ICT tools to know the method of sowing crops scientifically and another 53 percent of the respondents were keen to get information on subsidy/MSP about the agricultural products. Likewise, 42 percent of the respondents stated that they use ICT tools exclusively for getting information regarding the correct agro inputs for cultivation and another 31 percent of the respondents disclosed that they seek the help of ICT tools for weather and market updates and so on.

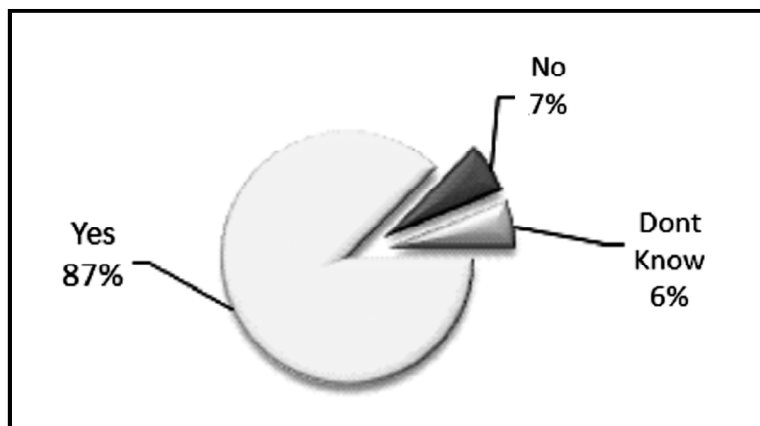
Fig: 1. 4: Reasons for Not Adopting the ICT in Agriculture



On the contrary, when asked the reasons to those respondents not interested in using ICT tools in agriculture, a few reasons were provided and the same is depicted in Fig; 1.4. Accordingly, the primary reason in case of 64.8 percent (see Fig; 1.4) of the respondents is the lack of awareness regarding the ICT technology. Similarly, other reasons included were difficulty in using the technology (64.2 percent), Lack of ICT facilities (53 percent), Lack of ICT skill and inability to use (49 percent), Not interested in ICT (45.8 percent), Cost of ICT is high (43.8 percent), Fear or distrust of ICT (38.5 percent), Impediments like age, knowledge, language etc. (38.5 percent) and lack of time to spend on learning ICT tools (16.5 percent). All these reasons have led them to become pessimistic about ICT tools.

Finally, answering to the query on whether ICT has really helped in increasing the agriculture production, it is observed from Fig; 1.5 that an overwhelming 87 percent of the respondents agree that ICT tools are really helping them in increasing their agricultural productive while only seven percent of them giving a negative opinion about the usefulness of ICT tools in agriculture and another six percent failed to provide any opinion regarding the helpfulness of the ICT tools in agriculture.

Fig: 1.5: ICT Help for Increasing Agricultural Production



Hypothesis Testing:

Following hypothesis was tested using appropriate techniques and results are accordingly interpreted.

Independent t-test is used to identify the difference between ICT users and non ICT users in the returns of agricultural commodities of paddy, maize, and potato.

Here the study considers the difference between ICT users and non ICT users; ICT users are those respondents who are using ICT tools like TV, Radio and Mobile phones to get agriculture related information and; non ICT users are those respondents who are not using any ICT tools like TV, Radio and Mobile phones to receive agricultural information.

The returns earned by the respondents in this context means the net income earned by them subtracting the expenditure considering only three commodities which are paddy, maize and potato. The returns are considered per acre of land.

H_0 ; There is no significant difference in the total agricultural returns of ICT users and non-ICT users.

Independent t-test¹ result:

Table 1: Independent t- test Result

Variable	N		Mean	SD	T-value	P-value
Agricultural Returns (in Rs)	ICT user	131	105561	31743.7	10.324	0.000*
	Non ICT user	269	78224	20863.7		

* Significant at 5 % level.

The independent t-test, also called the two sample t-test, is an inferential statistical test that determines whether there is a statistically significant difference between the means in two unrelated groups.

Independent t-test result in Table -1 indicates that as the p-value (0.000) is less than the significance level of 0.01 (at 99% confidence level) the null hypothesis is rejected. In other words, we conclude that there is a significant difference in mean total agriculture returns of those respondents using ICT tools and not using the ICT tools for agricultural purposes. In essence, there

is a statistical evidence to conclude that farmers adopting ICT in agricultural related activities are earning more than those sample farmers not using ICT tools. This is evident from the fact that the mean agricultural returns of farmers using ICT tools is Rs. 1,05,561 which is higher than the mean returns Rs. 78,224 of non ICT usage farmers in sample study.

CONCLUSION

The study comes out with clear output that, the use of ICT in agriculture is beneficial and have resulted in increased income for small and marginal farmers. The researchers are of the opinion that, more publicity materials should be brought out to create the awareness on the uses and benefits of ICT. Government should come up with a policy frame work exclusively for ICT use in agriculture. This will help in strengthening the working of ICT and also benefit more number of small and marginal farmers as exclusive programs focusing on agriculture can be formulated. In addition, ICT kiosks can be established for easy and speedy redressal of agriculture and related quires so that we can walk in the path of sustainable development. Since, ICT believes in participatory approach the more the use the more it will empower. The whole idea is to develop better visioning and empowering the farmers with latest technology and farming practices through the ICT.

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An Analysis of the Impact of Land Degradation on Agriculture in India

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Abstract

Agriculture is one of the main occupations in developing countries. More than 58% of population depends on agriculture directly or indirectly in India. Agriculture production is based on fertile soil. Soil fertility and productivity are directly influenced by a balance of chemical and organic fertilizers. But disproportionate and imbalanced use of chemical and organic fertilizers and other natural hazards affect the soil fertility. According to National Bureau of Soil Survey and Land Use Planning (NBSS&LUP) 146.8 Mha of land has degraded in the year 2004 in India, which had a direct impact on sustainable agriculture. Government of India has taken important measures to improve soil fertility by providing awareness and announcing several programmes about soil fertility and sustainable agriculture to farmers. In this context, it has provided Soil Health Card to farmers. Soil Health Mission is an important initiative by Government of Karnataka. These programmes aim to provide awareness to the farmers towards improving soil fertility and sustainable agriculture. In spite of all these initiatives, the data reveals declining soil fertility and depletion of nutrients. This study aims at analysing the trends in the usage of chemical fertilizers, soil degradation in India and Karnataka. The analysis observed that Madhya Pradesh and Chhattisgarh states have highest degraded area (26.2 Mha) followed by Uttar Pradesh and Uttarakhand. Karnataka's soil is largely Zinc deficient. The paper discusses about the impact of agricultural policy and suggests required measures to reduce soil degradation for sustainable agriculture.

Keywords; Agriculture, Land, Degradation, India, Karnataka

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INTRODUCTION

Agriculture is the main occupation in many developing countries. More than 58 percent of population depends on agriculture directly or indirectly in India. Agriculture production is based on fertile soil. Soil fertility and productivity is directly impacted by a balance of chemical and organic fertilizer. But disproportionate and imbalanced use of chemical and organic fertilizer and other natural hazards affect soil fertility. According to NBSS & LUP 146.8 Mha of land has degraded in the year 2004 in India, directly affecting sustainable agriculture. Land is an important resource for food production. Until recently, policy makers and policy analysts have not perceived land degradation as a threat to global food security. It has been widely assumed that at the global level, land is in abundance, and is less important than other factors in determining agricultural productivity (De Vries et al. 2002)

Soil is the uppermost layer of the earth and one of the most important natural resources. It plays a crucial role in agriculture production, because there is no substitute for the soil for cultivation. Based on depth, clay content and other soil parameters there are six types of soils in India. They are red soil, black soil, alluvial soil, laterite soil, desert soil, hills and terrain soils. Red soil covers the largest area (105.5 M ha) and black soils cover 73.5 M ha. While alluvial soil 58.4 M ha, laterite soils 11.7 M ha, desert soils 30 M ha and hills and terrain soil covers 26.6 M ha.

The term soil fertility has many definitions and is understood in many ways (Patzel et al. 2000). In its narrow sense, soil fertility refers to the soil capacity to supply nutrients to the plant in sufficient amount at the right time. The three major nutrients are Nitrogen (N), Phosphorous (P) and Potassium (K). Soil fertility is understood as a combination of chemical, physical and biological factors that affect the land capacity to supply nutrients to the plant. As defined by the Soil Science Society of America (SSSA, 1997) soil fertility is "the quality of a soil that enables it to provide nutrients in adequate

amounts and in proper balance for the growth of specified plants or crops”. This definition seems more appropriate as the different practices used by farmers not only change the nutrient status of the soil but also its structure and its biological status (e.g. the preservation of crop residues enhance the soil structure as well as its nutrient content). Excess quantity and imbalance in the usage of chemical fertilizers, unscientific farming and natural calamities influence the soil fertility negatively.

Soil fertility is the soil's ability to produce and reproduce. It is the aggregate status of a soil consequent on its physical, chemical and biological well-being (Reddy, 2013). Soil fertility decline encompasses nutrient depletion or nutrient decline (i.e. removal of nutrients greater than addition of nutrients), nutrient mining (i.e. only removal of nutrient, no addition of nutrients), acidification (i.e. decline in soil PH), the decrease of soil organic matter content and the rise in toxic element like Aluminium (Hartemink, 2006). Thus, practices related to soil fertility encompass practices for the replenishment of the soil fertility practices to sustain soil fertility and the ones to enhance soil fertility (Jeannin, 2013).

According to the Compendium on Soil Health, Ministry of Agriculture and Cooperation (2012) “Intensive agriculture, while increasing food production, has caused second generation problems in respect to the nutrient imbalance including greater mining of soil nutrients to the extent of 10 million tonnes every year, depleting soil fertility, deficiencies of secondary and micronutrients, decline of water table and its quality of water, decreasing organic carbon content and overall deterioration in soil health”.

Chauhan and Mittu (2015) observed soil fertility as a function of the biological, physical and chemical characteristics of soil. Therefore, it is suggested that an organic fertility program should consider all of these interrelated factors to optimize and sustain crop production. Decrease in soil fertility has negative consequences on agricultural production. As observed by Lal (2015) soil degradation characterized as decline in quality and decrease in ecosystem goods and services, is a major constraint in achieving the required increase in agricultural production.

As per the estimates of Indian Council of Agricultural Research (ICAR,

2010), out of total geographical area of 328.73 million hectares, about 120.40 million hectares is affected by various kind of land degradation resulting in annual soil loss of about 5.3 billion tonnes through erosion. This includes water and wind erosion (94.87 M ha), water logging 0.91 (M ha), soil alkalinity (3.71 M ha), soil acidity (17.3 M ha), soil salinity and mining and industrial waste (0.26 M ha).

REVIEW OF LITERATURE

Lal (2015) analyzed the importance of soil fertility in agriculture in the study ‘Restoring soil quality to mitigate soil degradation’. The main aim of this study is to identify the strategies for improving soil quality to mitigate risks of soil degradation. The study identified creating a positive soil or ecosystem budget, improving availability of macro and micro nutrients, increasing soil biodiversity especially the microbial process, enhancing rhizospheric process as important strategies to restore soil fertility and reducing environmental damage. A similar study by Sannappa and Manjunath (2013) shows that PH and EC of soils ranges from 5.25 (Sirsi), 7.83 (Madikeri) and 0.03 (Sirsi) and 0.28m.mhos/cm (Shimogga). Organic carbon and available nitrogen content are significantly more in H.D.Kote and Sakaleshpura regions. Madikeri region's soil contains high phosphorus content. Both Madikeri and Sakaleshpura region recorded highest potassium content. The work of Singh and Tiwari (2012) is based on both primary and secondary data. Primary data was collected from scientists and farmer's interaction. The study selected 200 soil sample surveys and then the findings were interpreted by comparing with earlier results. The soil samples collected were mainly from fields growing rice- wheat, rice-vegetables-pea, rice - vegetables, pea-sugarcane-ratoon - wheat cropping. This study highlights imbalanced use of fertilizers in rice-wheat cropping, depletion of organic matter, ground water and humus attributed to more use of pesticides and pathogens as the reasons for soil fertility depletion. The study suggests training programmes, deep ploughing, green manuring, organic farming, crop residue management, crop diversification, balance use of fertilizer etc. as measures

for maintaining soil fertility. Another study by Majumdar (2015) shows that there is a positive and significant relationship between the bio fertilizer use and agricultural output. The use of bio fertilizer in the place of chemical fertilizer is a good way for the sustainable agriculture.

OBJECTIVES

The main aim of the study is to analyse the trends in the soil degradation in India in general and Karnataka in particular.

METHODOLOGY

The study is based on secondary data sources. The data was collected from various reports published by the Government of India and Karnataka such as Environment reports, Soil Health Mission Report etc. Necessary details extracted from these reports are shown in Table 1.

Table 1: Land degradation in India estimated by different organizations

S/N	Organizations	Assessment	Degraded Area
		Year	(Mha)
1	National Commission on Agriculture	1976	148.1
2	Ministry of Agriculture-Soil and Water Conservation Division	1978	175.0
3	Department of Environment	1980	95.0
4	National Wasteland Development Board	1985	123.0
5	Society for Promotion of Wastelands Development	1984	129.6
6	National Remote Sensing Agency	1985	53.3
7	Ministry of Agriculture	1985	173.6
8	Ministry of Agriculture	1994	107.4
9	NBSS&LUP	1994	187.7
10	NBSS&LUP (revised)	2004	146.8

Source: Ranjan Bhattacharyya et al. (2015)

ANALYSIS AND DISCUSSION

According to 2004 revised statistics of National Bureau of Soil Survey & Land Use Planning (NBSS&LUP), out of total geographical area of 328.7 Mha in India 146.8 Mha (44.60%) was degraded by various sources. This shows a decline in the degradation from 187.7 Mha reported in the year 1994. Even after giving allowance for the differences in methodologies, the estimates show a considerable amount of degraded land in India.

Soil degradation has become a serious problem in both rain fed and irrigated areas of India. India is losing a huge amount of money from degraded lands. This cost is documented by declining crop productivity, land use intensity, changing cropping patterns, high input use and declining profit. (Ranjan Bhattacharyya et al. 2015). The issue of land degradation needs attention as soil degradation has an influence on the livelihoods of millions of marginal and small farmers in the form of increasing the cost of cultivation as more and more external inputs are needed to maintain the same levels of output.

State-Wise Land Degradation in India

Soil degradation is not uniform across the country. Some states have more degraded land compared to others. As reported by Bhattacharya (2015), Madhya Pradesh and Chattisgarh have more degraded land. The table 2 shows the extent of degraded land in different states.

The data shows that out of the total geographical area 328.7 Mha, 146.8 Mha was degraded area by various sources. Madhya Pradesh and Chhattisgarh states have highest degraded area (26.2 Mha), Uttar Pradesh and Uttarakhand states are in the second place in degraded area and its share is 15.3 Mha, Andhra Pradesh and Telengana are in the third place in degraded area (15.0 Mha) whereas Karnataka state has 7.6 Mha of degraded area. In the absence of total cultivated area in different states the share of degraded land in the total area in respective states is not known. Punjab (1.3 Mha) and Haryana (1.5 Mha) have less degraded land. Land degradation is also very low in Goa and North Eastern States.

Table 2 The Extent of Degraded Land in Different States

S/N	State	Degraded Area (In Mha)
1	Andhra Pradesh and Telengana	15.0
2	Goa	0.2
3	Karnataka	7.6
4	Kerala	2.6
5	Tamil Nadu	5.3
6	Manipur	1.9
7	Mizorum	1.9
8	Meghalaya	1.2
9	Assam	2.2
10	Arunachal Pradesh	4.6
11	Nagaland	1.0
12	Sikkim	0.2
13	Tripura	0.6
14	Himachal Pradesh	4.2
15	Jammu and Kashmir	7.0
16	Uttar Pradesh and Uttarakhand	15.3
17	Delhi	0.1
18	Haryana	1.5
19	Punjab	1.3
20	Bihar + Jharkhand	6.3
21	West Bengal	2.8
22	Union Territories	0.2
23	Gujarat	8.1
24	Rajasthan	11.4
25	Madhya Pradesh and Chhattisgarh	26.2
26	Maharashtra	13.1
27	Orissa	6.1
28	Grand Total (Mha)	146.8

Source: Ranjan Bhattacharyya et al. (2015)

Soil fertility status

Fertility status of soil in different states as reported in fertilizer statistics (2013-14) provides an overview of fertility status in different states of India. The status is estimated based on the quantity of NPK used. Usage of more than 450 kg of Nitrogen, 50 kg of Phosphorus and 280 kg of Potash is considered as high usage.

Table 3: Soil fertility status in India in terms of N P K

S/N	States	Nitrogen	Phosphorus	Potash
1	Assam	Medium	Medium	Medium
2	Arunchal Pradesh	High	Low	High
3	Manipura	Low	Low	Medium
4	Meghalaya	High	Low	Medium
5	Mizoram	High	Low	Medium
6	Nagaland	High	Medium	Low
7	Odisha	Low	Low	Medium
8	Tripura	Medium	Medium	Medium
9	West Bengal	Medium	Medium	Medium
10	Gujarat	Medium	Low	High
11	Goa	High	Medium	Medium
12	Madhya Pradesh	Medium	Medium	High
13	Maharashtra	Low	Low	High
14	Haryana	Low	Low	Medium
15	Himachal Pradesh	High	Medium	Low
16	Jammu and Kashmir	Medium	Low	Low
17	Punjab	Medium	Medium	High
18	Uttar Pradesh	Low	Low	Medium
19	Andhra Pradesh	Low	Low	High
20	Andaman and Nicobar Islands	Low	Low	Low
21	Karnataka	Medium	Medium	High
22	Kerala	Low	Medium	Medium
23	Puducherry	Low	Low	Medium
24	Tamil Nadu	Low	Medium	High
	India	Low	Medium	High

Source: Fertilizer Statistics 2013-14, Department of Fertilizers Ministry of Chemicals and Fertilizers, Government of India

The Table 3 shows the information about soil fertility status in terms of

major nutrients in India. At an all India level the availability of nitrogen is observed to be low. On the other hand the phosphorus content in the soil is observed to be at medium level (25-50 Kg/ha). However, the availability of potash content in the soil is observed to be high (more than 28 kg/ha). This data clearly shows the imbalance in the availability of major nutrients in the soil. In Karnataka state the availability of nitrogen and phosphorus content is of medium level but potash content is of high level. This also shows the imbalance in the availability of nutrients in the soil.

Status of Soil Fertility in Karnataka

Agriculture productivity depends on quality and availability of natural resources like soil and water. So fertile soil is more important to agriculture production. Using the improved varieties of seeds and the usage of the chemical fertilizer increases the agriculture production. But on the other hand use of chemical fertilizers results in mining of soil nutrients leading to depletion of soil fertility and organic matter etc.

Soil Health Mission (SHM) of Karnataka has estimated the nutrient deficiency of soil in different districts of Karnataka during the year 2013-14. As per the estimates, Karnataka has serious deficiency in several important nutrients.

The data relating to the nutrient deficiency of different districts is presented in table 4.

The data shows that Karnataka soil is severely deficient in zink. As per the estimates there is more than 50 percent (52.24%) zink deficiency in the soils of Karnataka. Higher deficiency of zink is observed in Mandya (99.16%), Tumkur (76.71%), Shimoga (63.20%) Davanagere (78.71%), Chickkamagalur (67.76%) and Dakshina Kannada (62.16%). The next important nutrient which is found deficient is Nitrogen which is deficient by 41.17%. Among the districts Kolar (83.42%), Tumkur (94.41%), Bijapura (64.67%), Mysore and Chamarajanagara (62.38%) and Shimoga (57.66%) are the highly deficient districts. Deficiency of Potash is observed in Bagalkot (83.51%), Gadag and Haveri (64.10%), Dharwad (56.28%) and Bijapura

(70.30%).

Table 4 : District wise percentage deficiency of nutrients in soils of Karnataka (2013-14)

S/N	District	N	P	K	Acidic	EC	S	Zn	Cu	Mn	Fe	B
1	Chikkamagalur	36.11	17.72	23.54	43.57	0.00		67.76	3.14	2.79	12.42	18.10
2	D.Kannada	3.89	13.77	8.18	95.91	0.52		62.16	2.37	27.03	6.90	
3	Mandya	25.93	7.76	9.69	14.32	1.33		99.16	2.23	6.30	0.20	
4	Bagalakote	2.11	83.51	0.00	0.00	1.21						
5	Bidar	19.00	6.71	0.15	4.45	0.00		35.97	0.95	7.40	70.89	
6	Belagaum	28.17	36.13	0.21	13.47	0.21						
7	Gadag+Haveri	39.67	64.10	0.31	0.11	0.55						
8	Hassan	27.46	4.86	5.75	34.37	0.06						
9	Kolar	83.42	32.70	10.97	1.47	0.21		28.81	0.50	3.04	19.69	
10	Tumkur	94.41	11.06	6.01	13.39	0.27	13.14	76.71	8.86	21.96	69.87	75.19
11	Shimoga	57.66	12.86	12.34	12.86	31.14	24.73	63.20	2.13	5.96	1.01	12.06
12	Dharwad	28.58	56.28	0.77	8.45	0.13	32.58	35.90	0.00	25.64	53.85	19.19
13	Kodagu	10.17	20.05	11.75	84.14	0.00		16.39	4.46	2.49	1.44	
14	Raichur+Koppal	2.46	1.43	1.26	0.09	0.00						
15	Gulbarga+Yadgiri	26.54	23.08	0.20	0.08	0.00						
16	Bangalore urban+ Bangalore rural+ Ramanagara	40.70	0.89	20.35	25.91	0.16	54.03	1.35	1.51	22.61	65.67	
17	U. Kannada	31.60	40.88	28.18	69.81	0.08		24.52	0.00	4.09	1.09	
18	Davanagere	44.22	23.74	4.86	13.06	0.20		78.71	3.41	0.34	8.70	
19	Ballary	55.87	51.20	0.52	0.37	4.02	0.97	3.10	0.00	0.00	14.99	
20	Mysore+ Chamarajanagara	62.38	18.98	6.70	8.64	0.26		59.68	0.25	7.50	57.90	
21	Bijapura	64.67	70.30	0.00	0.00	1.59						
	Total	41.17	26.31	7.96	19.52	2.61	4.43	52.24	2.24	6.23	24.76	35.93

Source: Soil health mission 2014-15, government of Karnataka, Department of agriculture.

Fertile soil is most important in the agricultural production and sustainable agriculture. Natural calamities and unscientific farming has lead to soil degradation which will affect soil fertility. Present study analyses land degradation in India in general and Karnataka in particular. The major findings of the study shows Madhya Pradesh and Chhattisgarh states having highest

degraded area (26.2 Mha) followed by Uttar Pradesh and Uttarakhand states and where as Karnataka soil is severely deficient in zink.

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